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ABSTRACT

Information on land use in Saskatchewan is provided in this updated report by the Policy, Planning, and Research Branch of Saskatchewan Environment. Chapter I discusses the physical, economic, and cultural geography of Saskatchewan and traces the history of settlement in this province. Chapter II provides information on the province's resource base including geology and minerals, soils, vegetation, fish and wildlife, outdoor recreation, and water. Chapter III traces the history of land administration from pre-fur trade era to the present. Chapter IV, which comprises almost three fourths of the report, presents an overview of land use focusing on legislation, types, products, economics, and numbers of people involved in different land uses. Major sections include present land use, agriculture, forestry, wildlife, outdoor recreation, historic, cultural and heritage lands, lands for teaching and research, water and fisheries, mineral lands, settlements, and military lands. Sixteen fact sheets produced by the Land Use Policy Committee accompany this report and provide further background information on land use and the land use policy development process in Saskatchewan. Each sheet addresses a specific topic such as forest lands and waste disposal lands and may include photos, tables, maps, and graphs along with the written text. (DC)

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Land Use in Saskatchewan

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Land Use in Saskatchewan

P. C. Rump and Kent Harper
First Edition 1977
Second Edition, Revised 1980
Policy, Planning and Research Branch
Saskatchewan Environment

Two views on Saskatchewan's land

Saskatchewan to date has not experienced serious problems when relating the supply of Crown lands to the demand for the use of a land resource. As demands for land increase, new government policies and programs will develop to promote the optimum use of the provincial lands. New policies governing land will recognize that projected demand for the land resource will increase for the foreseeable future. Therefore, more regulatory action will be necessary to ensure sound land use practices.

Canadian Council of Resource
and Environment Ministers,
The Administration of Crown Lands
In Canada, 1972, p. 58.

No comprehensive land use policy has been developed by the province and, in effect, the use of the land environment is unco-ordinated and planned only at the level of particular resource interests. Therefore the prevailing pattern of land use in Saskatchewan is the outcome of an unstated policy in which:

- use of land that generates private as contrasted with social benefits are paramount;
- extraction of primary products (especially) minerals) from land is given priority over all other uses;
- much responsibility for land use planning is in the hands of agencies uninterested in environment or unable to exercise their environmental responsibilities for various reasons;
- environmental protection is given low priority when it comes into conflict with other concerns, particularly income-producing primary products extraction.

Saskatchewan Environmental Advisory Council,
1974 Annual Report, 1974, pp. 5-6.

Preface

The first edition of this report, published in 1977, was prepared by P. C. Rump and Kent Harper. Because of the demand for the report, revisions were made by staff of the Policy, Planning and Research Branch to provide updated information in this second edition. The format remains similar to the first edition.

This report, originally prepared for the delegates to the 1976 Saskatchewan Land Use Forum, is primarily designed to provide some basic facts about land use and land users in the province.

This document is intended to provide quick access to pertinent facts about Saskatchewan's land. Included in the report, therefore, is a short section summarizing the chapters as well as a section entitled "Land Use Facts and Highlights." The comprehensive table of contents, list of tables and list of figures will also assist the reader to discover important facts about Saskatchewan's land.

The section "Two Views on Saskatchewan's Land" is included in order to indicate two of the many contrasting opinions concerning land use in Saskatchewan.

This revised edition was based on information available at the time of preparation. Therefore, some information may be out of date at the time of publication. The user can obtain more current information by referring to the sources listed.

Information obtained from many sources was not always strictly comparable because of differences in definitions, time, and accuracy. This should explain any apparent discrepancies in the data presented in the report.

The information contained in this report should be used with discretion because of the possible discrepancies mentioned above. The report is a reference tool; its primary purpose is to facilitate public understanding and discussion of land use issues in Saskatchewan.

Acknowledgements

This report reflects the collective knowledge of many people.

The Land Use Workshop Planning Committee deserves credit for its gentle supervision of the project. Ideas, criticism and information on land use were received from the following committee members: Greg Roberts, Tom Townley-Smith, Lorne Sully, Joe Hnatiuk, and Dale Leitch. Committee members, with the help of their departmental colleagues, also reviewed early drafts of the report.

Gratitude must also be extended to all other individuals, government departments and non-government agencies who contributed information for the report.

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11

Land use facts and highlights

1. The area of Saskatchewan is 651,903 square kilometres, of which 81,632 square kilometres are covered with water. Saskatchewan occupies 6.5 per cent of Canada.

2. Saskatchewan's population is about 970,500, of which 45.4 per cent live in cities, 24.9 per cent in rural municipalities, 16.7 per cent in towns, 8.6 per cent in villages, 4.1 per cent on Indian reserves; and 0.3 per cent in conservation areas. The largest city in Saskatchewan is Regina, which has approximately 159,260 residents. Canada's population is growing by about 1.2 per cent per year, while Saskatchewan's is remaining relatively static; only a few of Saskatchewan's major population centers are growing. Saskatchewan contains 4.4 per cent of the total Canadian population.

3. Saskatchewan's economy remains heavily dependent upon agriculture. In 1976, agricultural production represented 53 per cent of the net value of total provincial commodity production.

4. Saskatchewan consists of a southern agricultural belt and a northern forest area. About 46 per cent of the total land area of the province is occupied farm land.

5. Almost one-half of the improved land in Canada is located in Saskatchewan. According to the 1976 census, a total of 46,692,931 acres of farm land have been improved in Saskatchewan.

6. Over 50 per cent of Saskatchewan is designated as provincial forest. This is the largest absolute and relative area of provincial forest in any Canadian province.

7. Thirty-eight per cent of Saskatchewan's land resource has been alienated to private landowners. This is well above the Canadian average and compares, for example, with only six per cent in British Columbia.

8. In the whole of Canada, Saskatchewan has 24 per cent of all private land, five per cent of the national park land, 22 per cent of the Indian Reserve land, two per cent of the provincial park land, and 56 per cent of the designated forest land.

9. Within the agricultural area of the province, 87.5 per cent of the land is patented. Of the 8 million acres of provincial Crown land designated for agricultural purposes, 1.8 million acres are PFRA community pastures, 4.2 million acres are leased to farmers and ranchers, nearly 700,000 acres are vacant, over 750,000 acres are provincial community pastures, and over 600,000 acres are association community pastures.

10. There are approximately 69,578 farms in Saskatchewan, with an average size of 939 acres.

11. According to the Canada Land Inventory there are 2,470,292 million acres of Class 1 agricultural land in Saskatchewan. Class 1 soils have no significant limitations for crops. This amount represents less than three per cent of the Saskatchewan area surveyed by the Canada Land Inventory. Classes 1, 2 and 3 occupy about 40 million acres or 47 per cent of the surveyed area.

12. The Canada Land Inventory covered Saskatchewan south of the 55th parallel of latitude (that is, south of Lac La Ronge). In this area the survey found that the major existing land uses were crop land (52 per cent), improved pasture and range land (21 per cent), non-productive woodland (14 per cent), productive woodland (9 per cent), outdoor recreation (2 per cent), and swamp, marsh and bog (1 per cent). Other land use categories, such as urban, mines, quarries and pits, horticulture, orchards, improved pasture, unproductive land and water, occupied less than one per cent of the surveyed area.

13. There are ten provincial forests in Saskatchewan. The total area of nine of these forests is approximately 2,207,600 acres. The tenth forest, the Northern Provincial Forest, covers the entire province north of the 55 degrees latitude and occupies approximately 78 million acres.

14. There are four types of areas in Saskatchewan that can be designated for wildlife purposes. Federal bird sanctuaries occupy an area of more than 156,000 acres. Game preserves occupy 98,070 acres, wildlife management units occupy nearly two million acres, and wildlife refuges occupy approximately 6,000 acres. However, it must be remembered that all four areas do not occupy mutually exclusive land areas. Federal bird sanctuaries are mainly water areas.

    Land purchased under the wildlife development fund occupies an additional 58,000 acres.

15. Saskatchewan contains approximately 295,260 square kilometres of productive waterfowl area. The province plays host to one-third of the North American waterfowl breeding population, which is more than Alberta and Manitoba combined. Five out of eight ducks (62 per cent) shot in North America are produced in the pothole region of the prairies.

16. Less than one per cent of Saskatchewan's land south of the 55th parallel has a high capability to support outdoor recreation.

17. There is one national park in Saskatchewan (Prince Albert National Park), which occupies 957,440 acres or 0.6 per cent of the province. There are 17 provincial parks in Saskatchewan, which occupy just over one million acres or 0.7 per cent of the province. Regional parks occupy another 16,000 acres.

18. Under *The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act*, there are 21 protected areas in Saskatchewan which occupy 48,636 acres. In addition, Saskatchewan's two national historic parks occupy 1,640 acres. Land designated as national historic sites, provincial historic parks and provincial historic markers occupy an additional area of more than 1,000 acres.

19. Lands devoted to research and teaching in Saskatchewan occupy at least 11,000 acres. Of this total, 6,441 acres or 58 per cent are federal agricultural research stations.

20. The total road allowance area in Saskatchewan occupies 1.2 million acres of land. Military lands in Saskatchewan occupy an area of approximately 1.64 million acres.

21. The total area incorporated into urban centres in Saskatchewan is nearly 300,000 acres (0.2 per cent). Thirty-seven per cent of this land is in cities, 36 per cent in towns, and 27 per cent in villages. Indian reserves occupy nearly 1.5 million acres or 0.9 per cent of Saskatchewan's land.

Chapter summaries

Chapter 1

The first chapter gives a concise introduction to Saskatchewan's physical, economic, and cultural geography. A large portion of the chapter is devoted to the history of settlement in the province. This segment begins with a discussion of the fur traders and explorers of the eighteenth century and ends with a brief description of the massive immigration to Saskatchewan and the present population of the cities in the province.

Chapter II

The second chapter discusses the resource base on which land use activities depend. This chapter deals with the province's geological divisions and resources. Some of the resources discussed are oil, natural gas, coal, uranium, potash, sodium sulphate, salt, copper, zinc, gold, silver, clays, sand, gravel, bentonite, helium, sulphur, and future assets. The estimated reserves of each resource are also discussed. In addition, this chapter deals with soils, fish and wildlife, vegetation, and water.

Chapter III

The third chapter presents a chronological perspective of land administration. This includes a historical survey of the pre-fur trade era, the fur trade era, the Dominion Lands Policy and the Natural Resources Transfer Agreement. Also discussed in this chapter is the present administration of land and related resources. The last segment of the chapter is based on land ownership.

Chapter IV

The main part of the report is contained in this chapter, which outlines the legislative base, the types, the products, the economic returns and the numbers of people related to various land uses. A section on water and fisheries is included in this chapter because of the great importance of water-land relationships. The main sections in this chapter are: present land use; agriculture; forestry; wildlife; outdoor recreation; historic, cultural and heritage lands; lands for teaching and research; water and fisheries; mineral lands; settlements; and military lands.

Chapter I[1]

Introduction

A. Physical geography

Saskatchewan has an area of 651,903 square kilometres (km²), of which 81,632 km² (mainly in the north) are covered by water.[2]

The province is completely circumscribed by artificial boundaries which cut across the major geologic and geographic zones of west-central Canada. The northern third is part of the Canadian Shield (see Figure 1-1). Precambrian rocks are exposed at the surface or underlie shallow glacial drift and sedimentary sands in a terrain which is rugged but not mountainous. Muskeg (swamps), numerous lakes and small streams indicate immature drainage systems, which carry the brackish water either to Hudson Bay via the Churchill River or to the Arctic Ocean via the Athabasca and MacKenzie Rivers.

The southern two-thirds of the province embodies two of the main physiographic units of North America: the Central Lowlands and the Great Plains. These units are separated by the Missouri Coteau. Neither of them shows any great variation over wide areas; both consist of areas of flat and undulating terrain as well as rougher uplands.

Most of the area within the Central Lowlands, often referred to as the Saskatchewan Plains, lies between 457 and 610 metres above sea level, while the part of the Great Plains referred to as the Alberta Plains lies above the 610 metre level and has its highest point in the western part of the Cypress Hills (Figure 1-2).

Most of the present topographical features of the prairies were established before Pleistocene time. The major uplands, with some exceptions, are capped by gravels of non-glacial origin, deposited in streams of Tertiary age.

The surface of the southern prairies is generally flat and looks like a peneplain, although the regional and local landforms provide some diversity. Indeed, the landscape has its "ups" and "downs". The "ups" are generally either erosional bedrock remnants or contorted bedrock and glacial drift piled up in so-called "thrust moraines," especially along the Missouri Coteau. The "downs" are either small post-glacial creeks or huge, late-glacial spillway channels.

Most uplands of the Saskatchewan Plains (second prairie level), such as Moose Mountain, the Touchwood Hills and the Allan Hills, emerge from the plains imperceptibly. Moose Mountain (elevation 807.7 metres), the highest, has a fairly steep south face. All of the uplands are covered by forests.

The Regina Plain, the central part of the Assiniboine River plain which stretches from west of the Touchwood Hills to the southeastern corner of the province, is an almost flat, glacio-lacustrine plain of minimal relief. The Souris River plain, which includes the area around Estevan, is predominantly a till plain with some relief due to either undulating depositional moraine ridges or erosional features. The Quill Lakes Plain is an area of internal drainage, sloping in from all sides towards the lakes.

The second prairie level is separated from the third, the Alberta Plains, by the east-facing escarpment of the Missouri Coteau. The maximum relief of the escarpment is 152 metres and the face is a somewhat distinctive feature when it is approached from the east.

The major plains of the third prairie level are situated around Old Wives Lake and on both sides of the western part of the South Saskatchewan River. The Bigstick Lake Plain, south of the river, is dominated by the Great Sand Hills, which give the otherwise rather flat surface a distinctive local pattern. All of these flat areas in the west are also areas of internal drainage, often associated with saline sloughs and poor soils.

The Saskatchewan River system drains a large part of the southern plains (Figure 1-3). Its two branches, entering the province nearly 322 km apart, meet east of Prince Albert and flow toward Lake Winnipeg in Manitoba. The southwestern area of the province is drained southward to the Missouri River, and the southeastern corner is drained by the Souris and Qu'Appelle Rivers to Lake Winnipeg via the Assiniboine and Red Rivers in Manitoba. Most southern Saskatchewan rivers flow through deep, V-shaped valleys which were formed by the erosional action of glacial melt water in unconsolidated sedimentary beds as the last continental ice sheet retreated.

B. Climate, soils and vegetation

Saskatchewan has a continental climate with relatively little marine influence (Figure 1-4). There are prevailing westerly winds and wide seasonal and daily ranges of temperature. Average monthly temperatures decrease northward, particularly in winter. Average January temperatures are -17.0°C in the south and -28.9°C in the extreme northeast. In July, an isotherm of 18.3°C runs along the southern border and an isotherm of 15.6°C runs through the middle of the province. Fortunately, the low annual precipitation is concentrated in the growing season. The average precipitation varies from 279 mm in the southwest to 457 mm in the northeastern part of the agricultural region, with wide local and seasonal fluctuations.

---

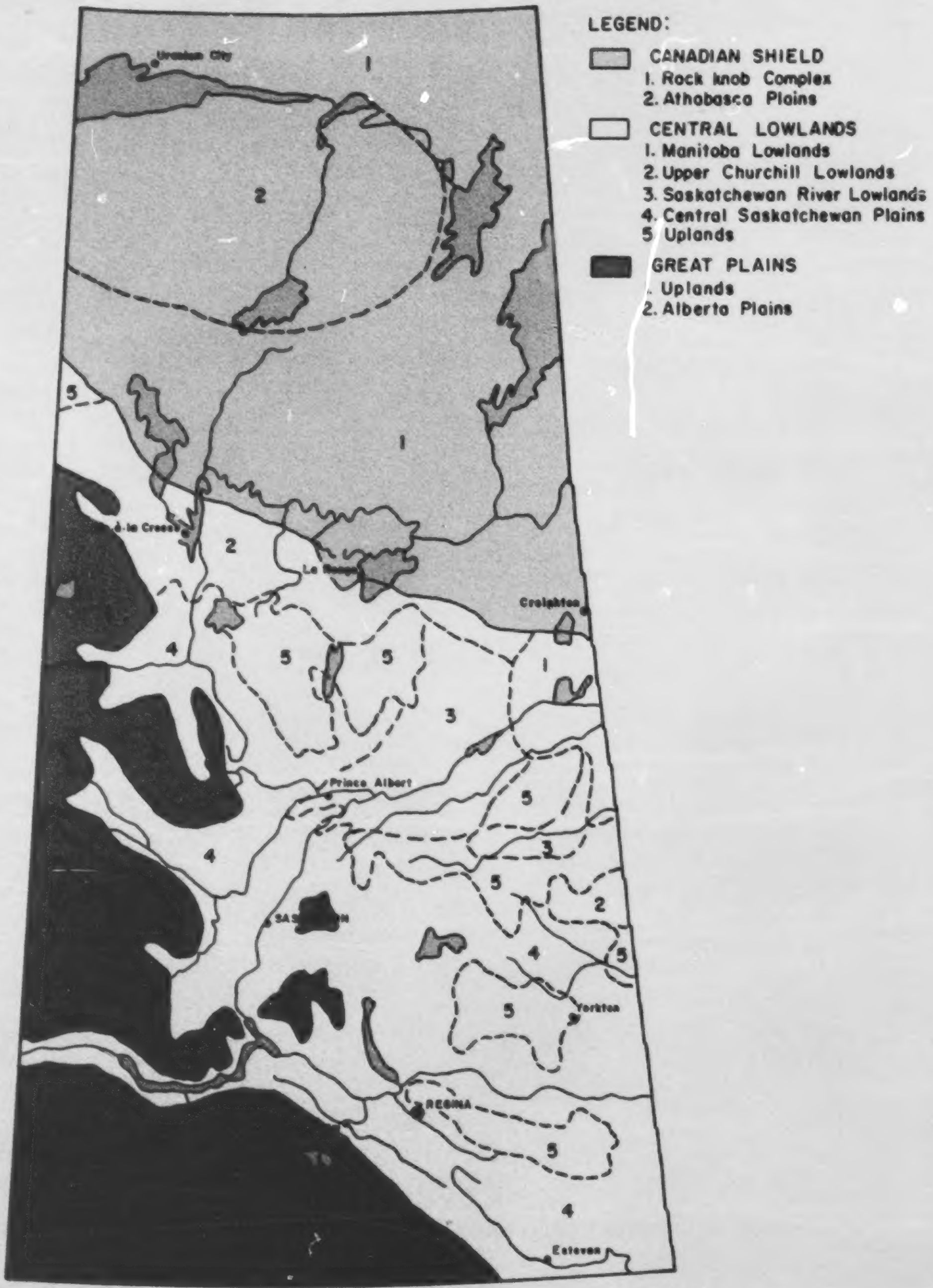
[1] The material for this chapter was derived primarily from:

Kurt V. Abrahamsson, "Landforms of Southern Saskatchewan", in *Background Papers Southern Prairies Field Excursion*, ed. by A. H. Paul, E. H. Dale, and H. Schlichtmann. Prepared for the 22nd Congress of the International Geographical Union (University of Saskatchewan, Regina Campus: Department of Geography, August, 1972), pp. 151-195.

Howard Richards and K. I. Fung, *Atlas of Saskatchewan*, (Saskatoon: University of Saskatchewan, 1969), pp. 39-78.

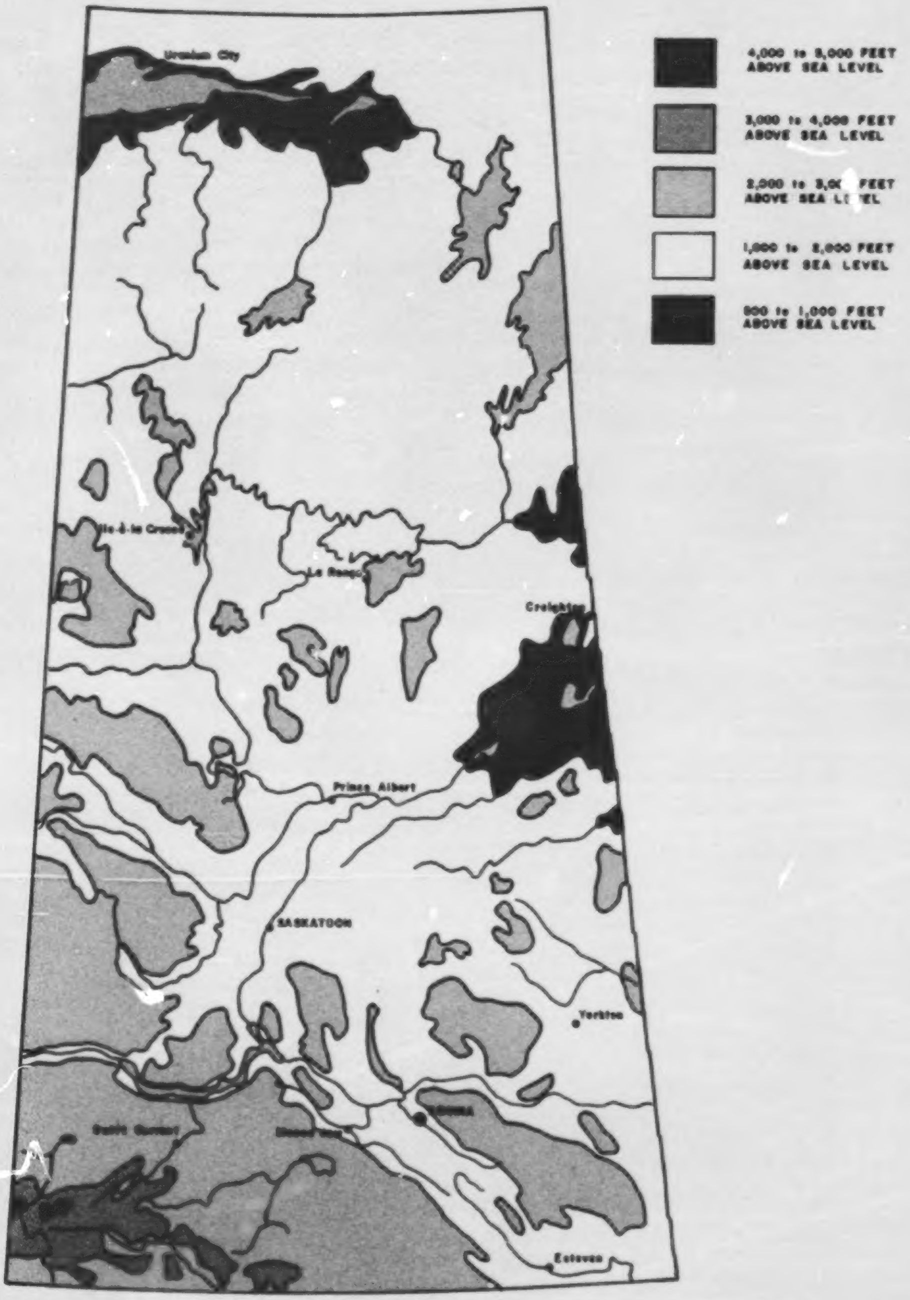
Saskatchewan Information Services, *Saskatchewan Notes*, 1977.

Metric units of measurement are used throughout the report. The Appendix gives common conversions of metric units to Canadian Imperial units.


LEGEND:
CANADIAN SHIELD
1. Rock knob Complex
2. Athabasca Plains
CENTRAL LOWLANDS
1. Manitoba Lowlands
2. Upper Churchill Lowlands
3. Saskatchewan River Lowlands
4. Central Saskatchewan Plains
5. Uplands
GREAT PLAINS
. Uplands
2. Alberta Plains
Uranium City
-à-la Crosse
Creighton
Prince Albert
Yorkton
REGINA
Estevan

SOURCE: A. Kabzens, et.al., Land Capability Classification For Forestry In Saskatchewan, Technical Bulletin No.6 (Saskatchewan Department of Natural Resources, Forestry Branch, March 1972), p.12.

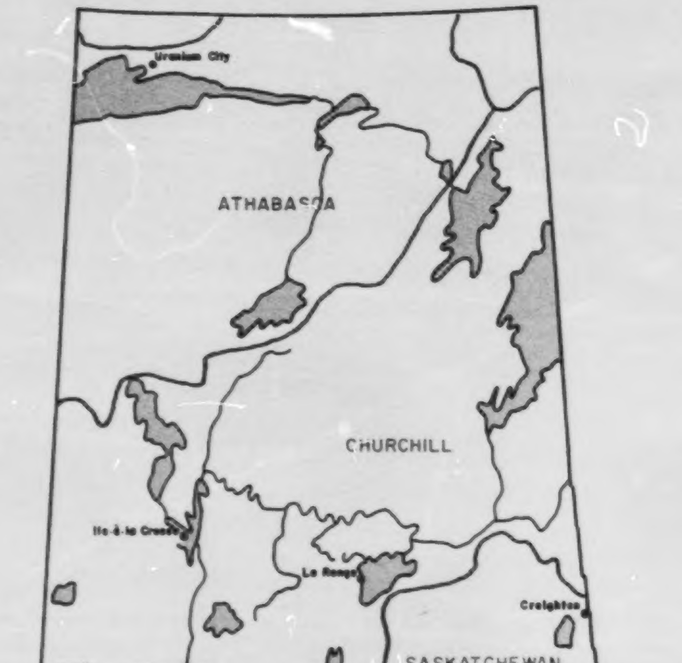
SASKATCHEWAN **DEPARTMENT OF THE ENVIRONMENT** POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN **MAIN PHYSIOGRAPHIC REGIONS** **OF** **SASKATCHEWAN**	**FIGURE** 1-1



Uranium City
Île-à-la Crosse
La Ronge
Creighton
Prince Albert
SASKATOON
Yorkton
Swift Current
Moose Jaw
REGINA
Estevan
4,000 to 5,000 FEET ABOVE SEA LEVEL
3,000 to 4,000 FEET ABOVE SEA LEVEL
2,000 to 3,000 FEET ABOVE SEA LEVEL
1,000 to 2,000 FEET ABOVE SEA LEVEL
500 to 1,000 FEET ABOVE SEA LEVEL

SOURCE: J.H Richards & K.I Fung, Atlas of Saskatchewan, (Saskatoon: University of Saskatchewan, 1969), p.3

SASKATCHEWAN **DEPARTMENT OF THE ENVIRONMENT** POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN **SASKATCHEWAN RELIEF MAP**	FIGURE I-2


Uranium City
ATHABASCA
CHURCHILL
Ile-à-la Crosse
La Ronge
Creighton
SASKATCHEWAN
Prince Albert
NORTH SASKATCHEWAN
RED DEER
SASKATOON
QU'APPELLE
ASSINIBOINE
Yorkton
SOUTH SASKATCHEWAN
CYPRESS
Swift Current
Moose Jaw
REGINA
OLD WIVES
SOURIS
Estevan
MISSOURI

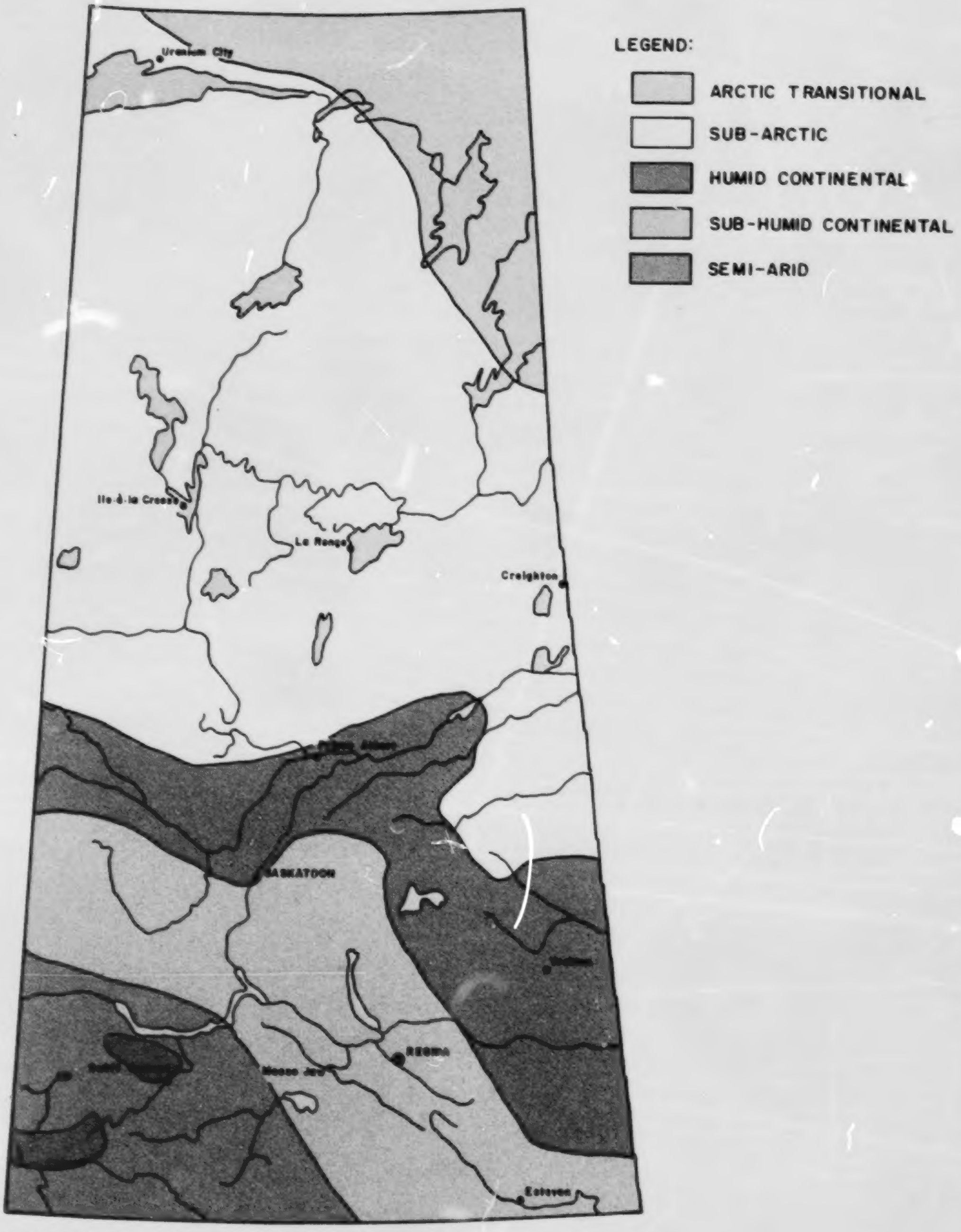
SOURCE: Saskatchewan Department of the Environment 1974 Annual Report For The Fiscal Year Ended March 31, 1974, p. 30

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN

WATER BASINS
IN
SASKATCHEWAN

FIGURE
1-3


LEGEND:
ARCTIC TRANSITIONAL
SUB-ARCTIC
HUMID CONTINENTAL
SUB-HUMID CONTINENTAL
SEMI-ARID
Uranium City
Ile-à-la Crosse
La Ronge
Creighton
Prince Albert
SASKATOON
REGINA
Moose Jaw
Estevan

SOURCE: J.H. Richards & K.I Fung, Atlas of Saskatchewan (Saskatoon: University of Saskatchewan, 1969),p. 4.

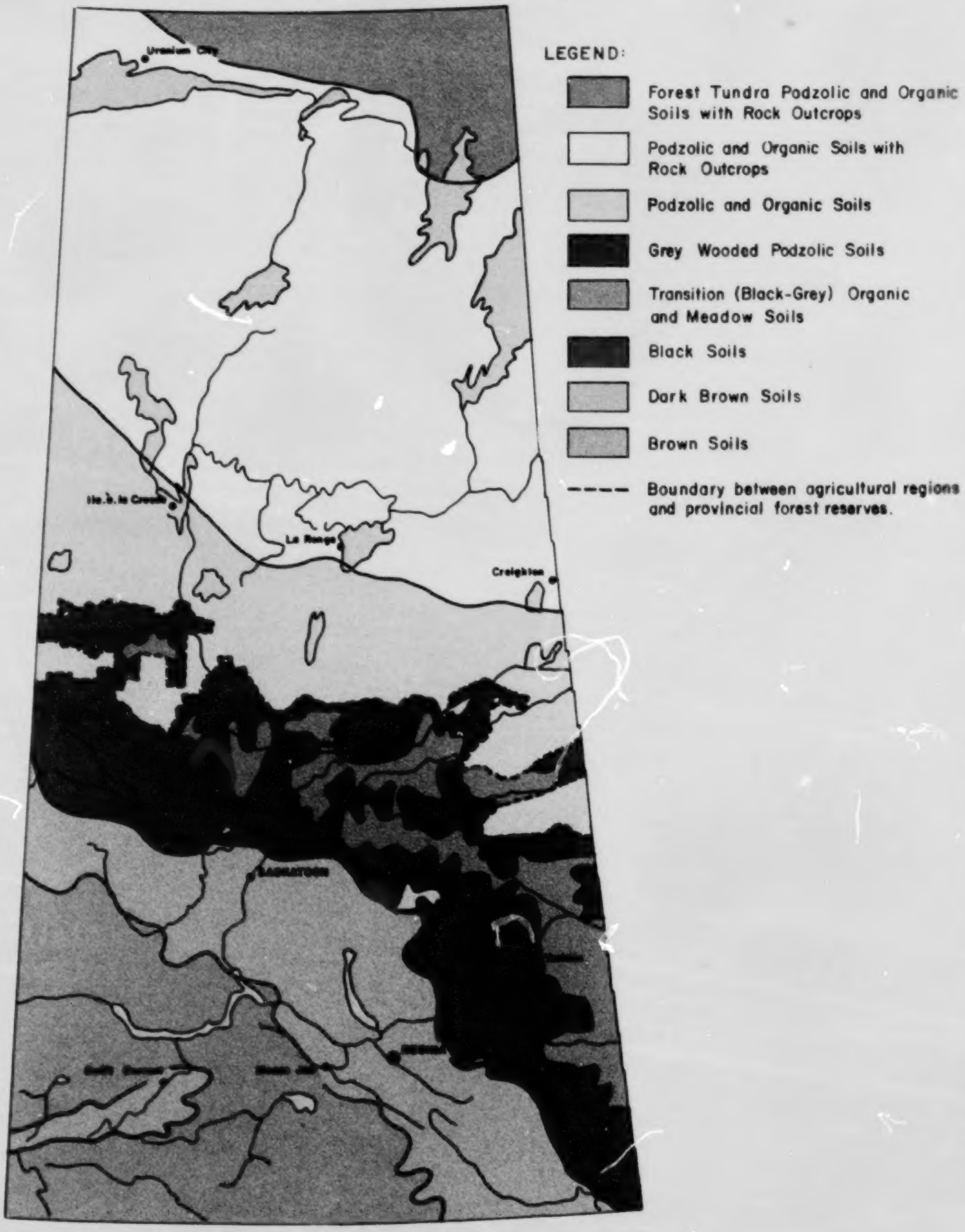
SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN

CLIMATIC REGIONS OF SASKATCHEWAN

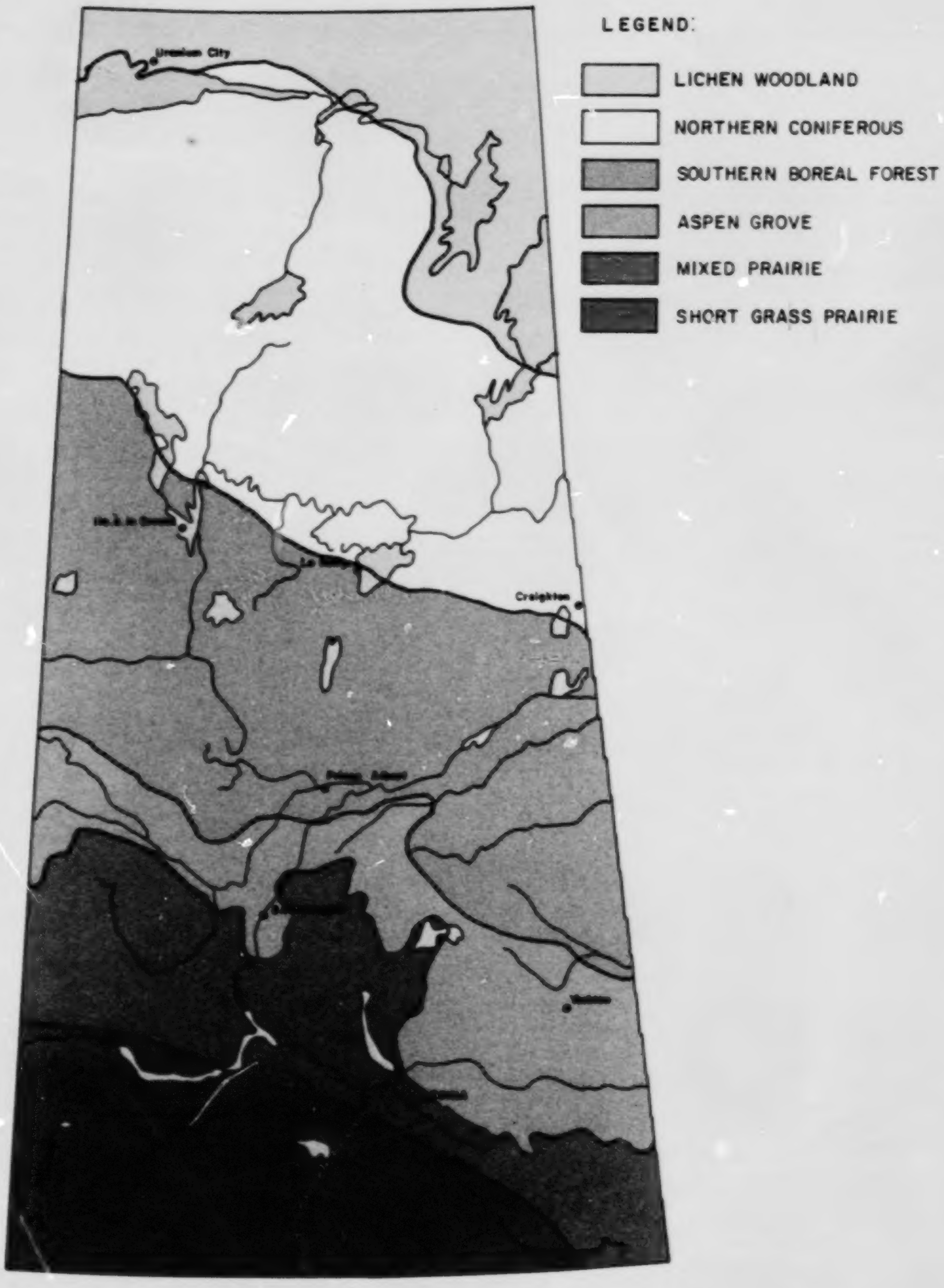
FIGURE I-4

18


Uranium City
Ile-à-la Crosse
La Ronge
Creighton
Saskatoon
LEGEND:
Forest Tundra Podzolic and Organic Soils with Rock Outcrops
Podzolic and Organic Soils with Rock Outcrops
Podzolic and Organic Soils
Grey Wooded Podzolic Soils
Transition (Black-Grey) Organic and Meadow Soils
Black Soils
Dark Brown Soils
Brown Soils
Boundary between agricultural regions and provincial forest reserves.

SOURCE: J.H. Richards & K.I. Fung, Atlas of Saskatchewan (Saskatoon: University of Saskatchewan, 1969), p.4.

SASKATCHEWAN **DEPARTMENT OF THE ENVIRONMENT** POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN	FIGURE 1-5


LEGEND:
▭ LICHEN WOODLAND
☐ NORTHERN CONIFEROUS
▨ SOUTHERN BOREAL FOREST
▨ ASPEN GROVE
■ MIXED PRAIRIE
■ SHORT GRASS PRAIRIE
Uranium City
Ile à la Crosse
La Ronge
Creighton
Prince Albert

SOURCE: Saskatchewan Department of Tourism and Renewable Resources, Forest Conservation In Saskatchewan, 1975, p. 2.

SASKATCHEWAN **DEPARTMENT OF THE ENVIRONMENT** POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN **SASKATCHEWAN VEGETATION ZONES**	FIGURE I-6

Because of their glacial origin, the clay and loam soils of the great plains in Saskatchewan are high in minerals. Well-defined zones of vegetative cover, each a characteristic of a particular set of climatic factors, have produced brown soils in the arid southwest, black soils in the prairies (grasslands) proper, degraded black soils in the parklands and grey-wooded soils in the northern extremes of the plains area (Figure 1-5). The grasslands are primarily producers of wheat, but their higher levels, such as the Cypress Hills and Moose Mountain, add variety to the landscape. Scattered clumps of trembling aspen in the wide belt of parklands (Aspen Grove) eventually thicken and merge into the mixedwood forest at a northwest-southeast line across the province between Prince Albert and Saskatoon (Figure 1-6). It is the northern part of this mixedwood belt which contains the best of the province's merchantable timber. North of it there is a transition to predominantly coniferous species. Still farther northward a wide expanse of potential pulpwood (chiefly black spruce and Jack pine) deteriorates into a zone of little commercial value. Poor soils and low temperatures in this zone reduce the quality of the tree cover.

C. Settlement history

The Indians:

Although there was human habitation in Saskatchewan at least as far back as 5000 B.C., little information about the numbers, movements and culture of the native people was obtained until the fur traders and explorers of the eighteenth century began to report on the area. During the early period of European contact, the Indian populations were divided into language families, tribal organizations and economic groupings. The tribe, or occassionally a loose association of tribes, was the largest political unit and was usually composed of people from the same language stock.

The Indians in the post-contact period:

A definite pattern of migration and cultural change began after the introduction of horses, guns and iron tools from the traders in Hudson Bay and the Great Lakes (Figure 1-7). The possession of horses opened up new possibilities for the people of the plains. The killing of buffalo became much easier, and a larger quantity of material goods could be obtained. The horse not only enriched the lives of traditional plains tribes, but it also encouraged forest tribes to move out onto the plains and adapt their culture to buffalo hunting. The introduction of fur trading encouraged Indian tribes in the Hudson Bay and the Great Lakes areas to extend their territories at the expense of those of the interior, and to expand the search for furs.

European diseases also influenced population and migration; the population of Indians in western Canada, for example, was greatly reduced by successive epidemics of measles and smallpox. Sometimes the weakness of certain tribes in times of epidemic encouraged the expansion of others. As a case in point, the great reduction of the numbers of Assiniboine in the epidemic of the 1840's facilitated the expansion of the Plains Cree.

Reactions of the Plains Indians and the Forest Indians to the fur trade were markedly different. The former had few valuable furs to trade with Europeans and needed only a few of the trade items offered; hence, they tended to remain separate from the fur economy and from European influence. The forest tribes, on the other hand, became increasingly involved in the fur trade economy, so that by the middle of the nineteenth century the migration of forest tribes had virtually stopped.

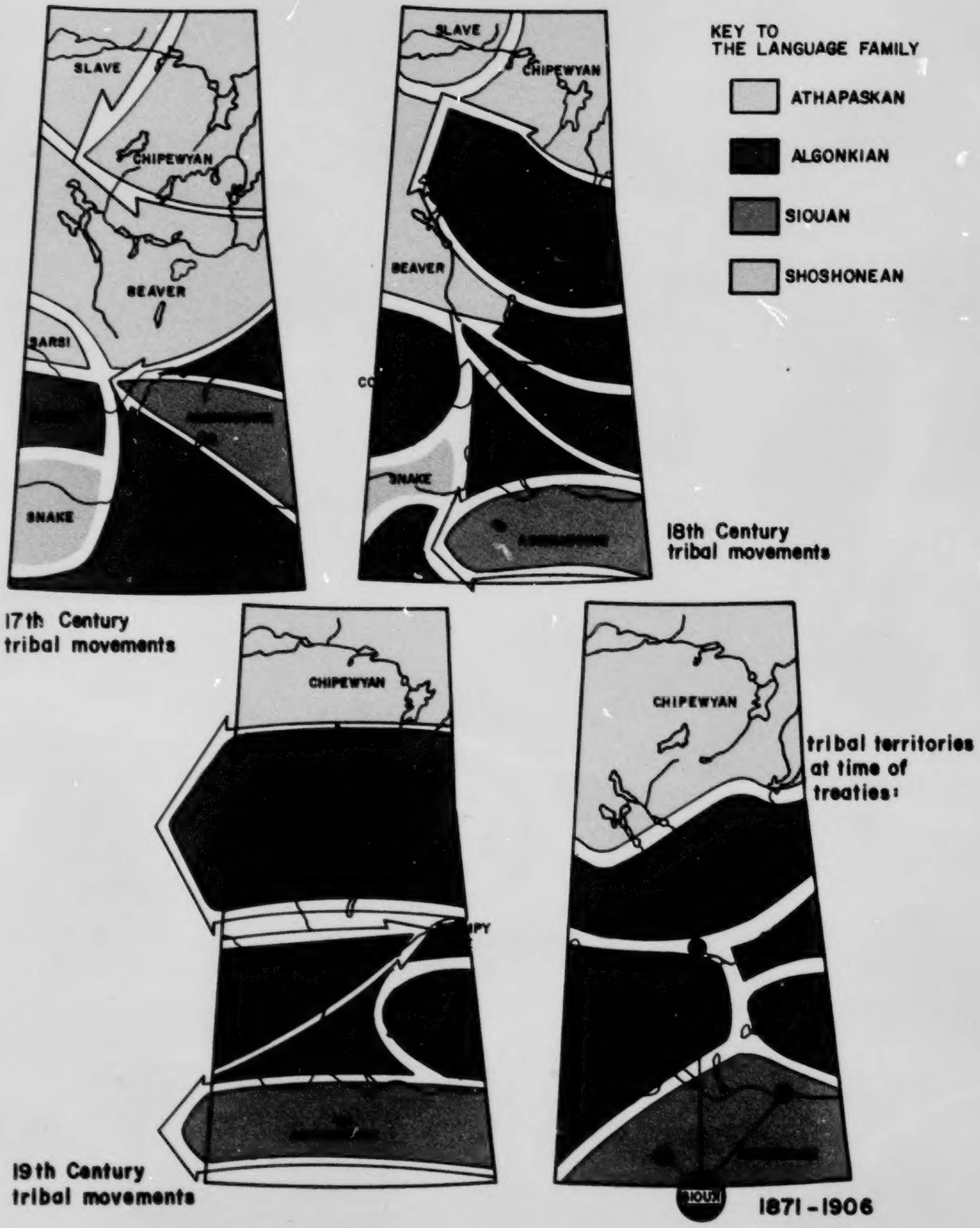
In order to encourage the spread of settlement, the Dominion Government signed treaties (Figure 1-8, Table 1-1) with all of the plains tribes between 1871 and 1877. The treaties guaranteed the Indians annual payments and reserve lands, permitted them to pursue their hunting way of life, and promised to support them in disaster. From 1878 to 1884 disaster was continuous. With the extermination of the buffalo, the Indians became dependent upon food provided by the whites and were faced with a future entirely different from their past. Dissatisfaction with the amount of food provided, the aid received in developing agriculture and the confining life of the reservation led to a general Indian hostility toward the new government.

The Europeans:

In 1670, King Charles II granted the unexplored area of western Canada (the North Western Territory and Rupert's Land) to the Hudson's Bay Company for exploitation of its fur resources. The first documented knowledge of this area came from an expedition by Henry Kelsey of the Company (1690-92). Subsequent explorations were conducted by the La Verendrye brothers around 1750, and thereafter by Anthony Henday and Samuel Hearne. In 1774 Hearne established the first white habitation to remain a permanent community, at Cumberland House on the lower Saskatchewan River.

Transfer of the territory to Canada in 1869 and a railway connection from Winnipeg to St. Paul, Minnesota in 1878 prompted immigration and homestead settlement. The dispossession of the resident Metis population without proper recognition of their land rights led to two uprisings, one in the Red River valley in Manitoba in 1869-70 and one in Saskatchewan in 1885. As a direct result of these conflicts over land and resource use, the North West Mounted Police were established in 1873. Organized government of the North West Territories south of latitude 60° was established in 1875, with Fort Livingstone as the first government seat. In 1877, Fort Battleford became the Territorial Capital. In 1882, Regina was made the territorial seat of government. Completion of the Canadian Pacific Railway in 1885 aided farm settlement, and a surge of immigrants after 1901 led to creation of the Province of Saskatchewan in 1905, with Regina selected as the capital city.

Rapid population growth continued until World War I (see Tables 1-2 and 1-3); the population increased from 91,276 in 1907 to 492,432 in 1911. Municipalities, towns and cities were established. The University of Saskatoon was founded in 1907. The settlers were widely diversified in nationality, culture and religion. Immigration slackened and practically stopped between World War I and II, and the depression years of the 1930's saw some emigration from the province and some relocation within. Settlers from the "dust bowl" moved northward into the forested regions to resume agricultural, logging and mining activities there. The return of wetter weather and improved crops in the 1940's encouraged reconsolidation and diversification of the provincial economy.


KEY TO
THE LANGUAGE FAMILY
ATHAPASKAN
ALGONKIAN
SIOUAN
SHOSHONEAN
SLAVE
CHIPEWYAN
BEAVER
SARSI
SNAKE
SLAVE
CHIPEWYAN
BEAVER
SNAKE
CHIPEWYAN
CHIPEWYAN
SIOUX

17th Century tribal movements

18th Century tribal movements

19th Century tribal movements

tribal territories at time of treaties: 1871-1906

SOURCE: Zenon Pohorecky, Saskatchewan Indian Heritage The First Two Hundred Centuries (Saskatoon, Extension Division, University of Saskatchewan, 1970), p.5.

SASKATCHEWAN DEPARTMENT OF THE ENVIRONMENT POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN TRIBAL MOVEMENTS AND TRIBAL TERRITORIES WITHIN SASKATCHEWAN	FIGURE I-7

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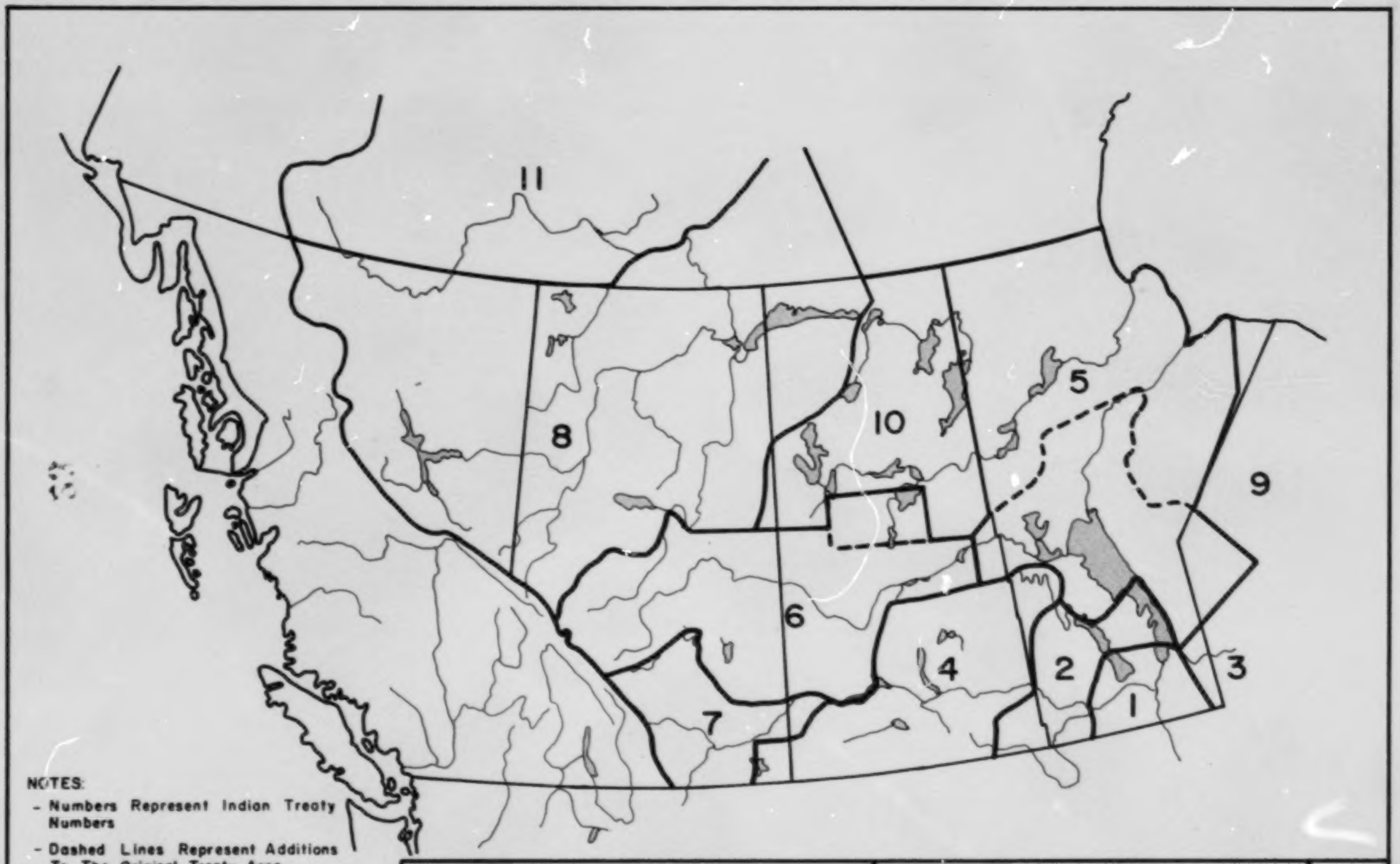
Table 1-1

Post-confederation treaties in effect in Saskatchewan

NOTE: In all of these treaties the native people agreed to observe the treaty, to keep the peace, not to molest persons or property, and to help in bringing native offenders to justice.

Treaty number, date	Tribes, area ceded	Government promises
Number 2 August 21, 1871	Ojibwa and others; 92,460 sq km	Reserves — 160 acres/family of five. To control liquor traffic. A school on each reserve. Annuity of $5/person, $25/chief, $15/headman, triennial suit of clothes for the chief and headman.
Number 4 September 15, 1874	Cree, Saulteaux; 193,215 sq km	Reserves — 640 acres/family of five. Government right to sell or lease reserve lands with consent of the band and to appropriate reserve lands for public use with compensation. Schools. Control of liquor traffic. Government regulations over hunting and fishing in ceded area. Treaty presents of $12/head, agricultural equipment, flags, medals. Annuity of $5/person, $25/chiefs, $15/headman, $750 annually for ammunition and twine, triennial suit of clothes for chiefs and headmen.
Number 6 August 23 and September 9, 1876	Plains and Wood Cree; 313,390 sq km	See Treaty No. 4, including Treaty presents and annuities. Extras included $1,500 for ammunition and twine, aid in case of pestilence and famine and a medicine chest for band use.
Number 7 September 22, 1877	Blackfoot, Blood, Piegan, Sarcee, Stony; 111,110 sq km	See Treaty No. 4, excluding hunting and school teachers. Treaty presents and annuities similar to Treaty No. 3, except for $2,000 annually for ammunition.
Number 8 June 21, 1899	Cree, Chipewyan; 841,490 sq km	See Treaty No. 4 Treaty presents — $12/person, $32/chief, $22/headman, agricultural implements, ammunition and twine, $1 per family head preferring hunting to farming. Annuities as Treaty No. 3.
Number 10 July 20, 1906	Chipewyan, Cree; 222,222 sq km	See Treaty No. 4 Treaty presents — see Treaty No. 8. Annuities as Treaty No. 4, unspecified amount for ammunition and twine.

Source: Margot J. Fawcett, ed., *The 1978 Corpus Almanac of Canada* (Toronto: Corpus Publishers Services Ltd., 1978), pp. 16-23 to 16-24.



NOTES:
- Numbers Represent Indian Treaty Numbers
- Dashed Lines Represent Additions To The Original Treaty Area

SOURCE: Margot J. Fawcett, ed., The 1975 Corpus Almanac of Canada (Toronto: Corpus Publishers Services Ltd, 1975), pp. 15-24.

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
INDIAN TREATIES OF WESTERN CANADA

FIGURE 1-8

Today Saskatchewan has 11 cities. Regina, the largest, has a population of 159,260 and is the seat of the provincial government. Saskatoon, which has a population of 141,167 is the second largest city. Other provincial cities are: Moose Jaw, Prince Albert, Swift Current, Yorkton, North Battleford, Estevan, Weyburn, Lloydminster and Melville.

Table 1-2

Population of Saskatchewan

1901	91,279
1911	494,432
1921	757,510
1931	921,785
1941	895,992
1951	831,728
1961	925,181
1971	926,242
1975	931,921
1978*	970,510

* Saskatchewan Hospital Services Plan Statistics;

Source: Margot J. Fawcett, ed., *The 1978 Corpus Almanac of Canada* (Toronto: Corpus Publishers Services Ltd., 1978), pp. 16-13.

Table 1-3

Immigrant population of Saskatchewan

Before 1931	74,575
1931-1945	3,375
1946-1950	6,295
1951-1955	7,135
1956-1960	6,010
1961-1964	2,965
1965-1966	2,670
1967-1968	4,015
1969-1971	3,650

The population of Saskatchewan is about 970,500 of which 45.4 per cent lives in cities, 24.9 per cent in rural municipalities, 16.7 per cent in towns, 8.6 per cent in villages, 4.1 per cent on Indian reserves, and 0.3 per cent in conservation areas. The largest ethnic group is British, followed by German, Ukrainian, Scandinavian, French, Native Indian, Dutch, Polish, Russian, and non-European.

In order of numbers, the principal religious denominations of the province are United Church, Roman Catholic, Anglican, Lutheran, Greek Catholic, Greek Orthodox and Presbyterian.

D. The economy of Saskatchewan

Saskatchewan's natural resources of soil, topography and climate (all of which were suitable for agriculture) attracted the first settlers to the province. The raising of grain and cattle were the first major industries. Today agriculture still holds first place as the province's largest individual source of income.

The volume and value of agricultural production may change considerably from year to year, depending on the weather and the markets. In 1976 a net amount of $2.2 billion was produced, representing 55 per cent of the net value of commodity production in the province.

Almost one-half of the improved land in Canada is located in Saskatchewan; about 46 per cent of the total land area of the province is occupied farm land. As well as producing about 60 per cent of all of the wheat in Canada, which is recognized as some of the finest in the world, Saskatchewan also produces most of Canada's oats and rye and is a major producer of barley and flax. The average wheat-crop yield in 1976 was 784 kg/acre. The past ten-year average for the province was 648 kg/acre, or an average crop yield of 9,891,500 tonnes. Grain crops are supplemented by specialty crops, such as rapeseed, mustard, buckwheat, peas, sunflowers, potatoes and hay.

Cattle were also important in the economic development of the west and today they account for 14 per cent of farm income. In addition, the meat packing industry provides significant employment in the province. Numbers of cattle in 1976 reached almost 2.91 million. Other livestock produced are chickens, turkeys, swine and sheep.

Increased diversification and mechanization have altered the style of farming in Saskatchewan during the past two decades. The average farm size has increased, for example. Current provincial agricultural programs are attempting to reduce this trend toward larger farms, stabilize the rural population, and encourage farmers to participate more fully in food processing.

In order to promote good farming practices, a series of programs has been designed to assist farmers. Such programs include land reclamation, soil conservation, use of water resources, pest control and assistance in combatting plant and livestock diseases.

Saskatchewan's economic structure is undergoing profound changes. From an almost entirely agricultural economy it is changing to one in which non-agricultural industries contribute nearly 50 per cent of the province's commodity production. The changeover started slowly in the post-war era with the discovery of oil. It grew as service and supply industries developed to support this find, and increased still further with the discovery of potash and the production of natural gas.

Saskatchewan is the second largest crude oil producing province in Canada; it supplied 20 per cent of the 1976 national total. There are three main oil producing areas: around Lloydminster in west-central Saskatchewan, near Swift Current in the southwest and in the Estevan region of the southeast. Production in 1976 was an estimated 55.9 million barrels. Natural gas is found mainly in the southwestern area of the province.

The most important non-metallic mineral mined in the province is potash. Saskatchewan contains over 63.5 billion tonnes, or more than one-half of the world's reserves of potash. The potash deposits sweep across the settled area of the province in a wide arc at depths that vary from 762 metres near Saskatoon to 2,438 metres near the United States border. Expenditures of $50 to $80 million must be made to develop each potash mine and refinery before the first ton of ore is recovered. At the end of 1976 ten mines were producing potash in the province. Production for that year was almost 4,990,495 million tonnes of potassium oxide (K^20). Potash is used primarily as fertilizer, but it is also used in the manufacture of television tubes, china, glass, soap, films, florescent lights and even jet fuels.

Mineral production dates back to the early settlement days when coal was first mined on the banks of the Souris River near the present site of Estevan. In 1887, 363 tonnes were mined. Today the annual production of coal from the same area is well over 1.8 million tonnes. All of the coal produced is lignite. Large-scale strip mining techniques are used. Recoverable reserves are estimated at 33 billion tonnes.

Exploration for metallic minerals began in the early 1900's in the northern area near Flin Flon on the Manitoba-Saskatchewan border. This area is still a major producer of gold, silver, copper, zinc and other minerals.

One of the most significant mineral discoveries in the post-war era was uranium in the Beaverlodge area north of Lake Athabasca, which made Saskatchewan the leading producer of uranium in Canada. During recent years the demand for uranium has increased, and there has been a renewed interest in exploration for this mineral. Dwindling supplies of petroleum have increased the importance of nuclear energy, so that the production of uranium is expected to increase. The opening of Gulf's mine at Wollaston Lake and Eldorado's new operation at Uranium City are instances of the increase in 1976 production.

A vast portion of Saskatchewan's northland is comprised of the Precambrian Shield, which extends over 233,000 km^2 of heavily mineralized land containing untold amounts of base-metal ore. Geological and geophysical surveys have helped to encourage exploration. Large deposits of iron are known to exist northeast of Prince Albert, but so far they remain undeveloped.

By the 1940's Saskatchewan had markedly increased its production of non-metallic minerals. The province contains Canada's main natural supply of sodium sulphate. Growing markets in the Kraft paper, detergent and glass-making industries draw heavily from these supplies. Reserves are estimated at more than 45 million tonnes. With eight plants in operation, production in 1976 was more than 416,813 tonnes.

A significant natural resource of Saskatchewan is its forests. They cover 388,500 km^2, of which 98,420 km^2 are considered to be commercial forest. Lumber and pulpwood, the products of these forests, are of great economic value. Saskatchewan's first pulp mill was completed in 1968. Located at Prince Albert, it processes approximately three-quarters of a million cords of pulpwood annually. Its current production is 900 tons per day of high-grade bleached kraft pulp.

Throughout the forested areas numerous small contractors produce saw lumber, power and telephone poles, posts and piling, railway ties and fuel wood. In conjunction with these operations are pole peeling and wood preservative plants. Planer, chip and saw mills are also located in the northern sections. An increasing demand for pressed wood has caused rapid growth in this industry; a particle board plant at Hudson Bay processes large quantities of chipped aspen (poplar). Plywood production is also increasing. Saskatchewan Forest Products' new Hudson Bay Plywood plant produces more than 6.7 million square metres (72 million sq. ft.) of high quality spruce plywood annually. The plant employs 150 persons and distributes its product within the province and to other areas of Canada.

Other economic benefits from Saskatchewan's renewable resources include those from hunting, trapping and fishing activities. In 1973, over 9.5 million was spent by big game hunters in Saskatchewan. During 1976-77, the market value of commercial fish caught in Saskatchewan was in excess of $5.5 million. The total value from fur pelts in 1976-77 was nearly $6.8 million. The average annual harvest from fur pelts over the 10 year period 1967-77 was $2.4 million.

Industrial service complexes have developed in potash, oil and mining areas as well as in the larger urban centres where labour and living accommodations are available.

Manufacturing and secondary industries have grown steadily over the past few years. At the close of 1976 total commodity production of factory shipments reached an estimated $4.08 billion. Recent growth is characterized by a marked increase in the number of plants producing non-agricultural products and a decline in manufacturing connected with agriculture. Cement and construction material suppliers and manufacturers, for example, continue to grow in order to meet the increasing needs of the province. The value of construction work performed in 1976 accounted for an estimated $1.35 billion and employed approximately 30,923 persons, who received an estimated $481 million in wages. Petroleum and petroleum products are now of primary importance in industry. Other leading businesses are meat packers, flour mills, bakeries, breweries, creameries, and poultry packers. The clothing industry has doubled its value and increased the range of its factory shipments over the past decade. Saskatchewan presently has a well-established chemical industry, including plants which produce industrial gases, fertilizers, paints, plastics, herbicides, insecticides, disinfectants, caustic soda, chlorine, fatty acid nitrogen derivatives and ammonium phosphate. Steel and metal industries are also gaining in importance. Saskatchewan now has a steel mill and pipe plant, three foundries, and factories which produce agricultural implements, cast sheet metal products, boilers, and household, industrial and office equipment.

Tourism is another important segment of the Saskatchewan economy. In 1977, estimated tourism expenditures in the province by Saskatchewan residents were $419 million; expenditures by non-Saskatchewan Canadians were $77.1 million. American and overseas tourists contributed $16 million to the overall total of $512.1 million.

E. Transportation

Until the early nineteenth century the chief means of transporting people and goods were by canoe along natural waterways or overland by horseback, pack horse, travois and toboggan. The amalgamation of the Hudson's Bay and North West Fur Trading Companies in 1821 led to some changes in the transportation of fur trade goods as larger boats replaced the canoe as the main medium of transportation. At the same time that the heavy "York" boat was being developed for service on the Hayes River between Norway House on Lake Winnipeg and York Factory on James Bay, flat bottomed "bateaux" were being developed for use on the shallower river waters in Saskatchewan. By the beginning of the railway era in western Canada an elaborate system of water transportation had emerged in order to facilitate the movement of standard goods and a limited number of passengers in this largely unpopulated territory. This system depended on the waterways and on the trails which carried the "Red River Cart."

In the late nineteenth century steamboat services were developed on the North and South Saskatchewan Rivers. These proved to be a useful method of transportation as far west as Medicine Hat and Edmonton.

Railway Transportation:

The history of railway construction in Saskatchewan can be divided into three periods: pre-1900; 1900 to 1917; and 1921 to 1931.

Prior to 1900 the extension of the railways in Western Canada was encouraged by the offer of federal land grants. The largest grant was given to the Canadian Pacific Railway for the construction of the first transcontinental line, which was completed in 1885. The land grant method was also used in order to encourage the construction of "colonization railways" in advance of settlement. Under the terms of this subsidy the land had to be fit for cultivation and therefore able to support permanent settlement. As the country developed there were increasing objections to such subsidies, and land grants were suspended in 1894. By this time, however, the area granted amounted to 31,780,000 acres, approximately half of which was in Saskatchewan.

The first transcontinental railway did not contribute significantly to early settlement in Saskatchewan. The world depression of the 1880's, adverse climatic conditions and inadequate technology caused a paucity of settlement until the end of the nineteenth centry. Between 1901 and 1916, however, Saskatchewan experienced its most rapid growth of population. This period also embodied the most rapid extension of railways in the province's history. Between 1900 and 1917 the railway increased from about 1,610 km to over 9,600 km. Two other transcontinental lines, the Canadian Northern and the Grand Trunk Pacific, were completed during this period. In order to encourage the construction of new lines, the provincial government guaranteed the bonds of certain branch lines that were to be constructed by the Canadian Northern and Grand Trunk Pacific. These guarantees backed the first mortgage bonds to the extent of $8,125 per km; a total of approximately 2,465 km were laid out and put in operation under this scheme.

Almost immediately after a completion of the third transcontinental railway, the Canadian Northern and Grand Trunk Pacific became unable to meet their financial commitments. During the railway crisis of 1914-1917, the federal government tried to stay off nationalization by purchasing some stocks of the Canadian Northern Line, but finally in 1917 the company was nationalized. It formed the main part of the Canadian National Railways. In 1923, the Grand Trunk Pacific line was also acquired by the federal government. Despite these financial difficulties there was a renewed emphasis on railway extension, particularly between 1921 and 1931, when about 3,220 km of branch lines (almost two-thirds of the total national increase) were built in Saskatchewan.

This third period was characterized by keen rivalry between the Canadian Pacific and the Canadian National Railways. Each built many branch lines, some of which were constructed on irrational plans. Grain was considered to be the most lucrative freight, and much effort was made by the two companies to extend their trackage "up to the ten mile limit." By the early thirties practically all of the settled parts of the province were within 16 km of a railway line, the lowest track density being in the southwest. The Duff Royal Commission on Railways and Transportation in 1931 criticized the railways for their unrestrained policy of branch-line construction. Their report concluded that

> . . . it is clear that there was intense rivalry between the two systems in new territory, particularly in the provinces of Saskatchewan and Alberta. The construction program of one company was responded to by an equal or greater program of construction by the other. The development of this territory did not meet expectations and the railways now find themselves with additional traffic mileage and an increased burden of capital charge.

Because of innovations such as the diesel engine, competition with other forms of transportation and the redistribution of population, there have been significant changes in the organization of railway services since 1931. The conversion from steam to diesel engines led to the abondonment of many railway yards and the concentration of services in fewer centres. Competition from other forms of transportation was most evident in local hauling, but the railway still accounted for over 90 per cent of interprovincial revenue freight originating or terminating in Saskatchewan. The competition from trucking companies and the inherent superiority of trucks over short hauls encouraged the development of streamlined operations and integrated transport systems by the two companies. For instance, in 1962 the Canadian Pacific Railway built a fully automated terminal in Regina in order to integrate its rail and road transportation facilities. Highway trailers belonging to both railway and other companies are now transported on railway flat-cars over long distances to large regional terminals, and from there by truck to local destinations. At the same time that such improved facilities came into operation, less use began to be made of branch lines depots.

Table 1-4

Rail line network — recommendations by province

Rail line category	**CNR**	**CPR**	**NAR**	**Total**	**% of prov. total**
	km	km	km	km	%
Province of Manitoba					
Basic network, guaranteed until 2000	3,213.1	1,853.6	—	5,066.7	69.2
Recommended to be added to basic network	190.7	78.9	—	269.6	3.7
Recommended to be transferred to P.R.A.	747.5	219.2	—	966.7	13.2
Recommended to be abandoned	691.4	327.2	—	1,018.6	13.9
Provincial total	4,842.7	2,478.9	—	7,321.6	100.0
Province of Saskatchewan					
Basic network, guaranteed until 2000	3,001.7	4,991.4	—	7,993.1	59.0
Recommended to be added to basic network	1,185.1	453.5	—	1,682.1	12.4
Recommended to be transferred to P.R.A.	1,215.2	845.0	—	2,060.1	15.2
Recommended to be abandoned	1,170.8	635.2	—	1,806.0	12.4
Provincial total	6,572.8	6,925.1	—	13,541.3	100.0
Province of Alberta					
Basic network, guaranteed until 2000	3,097.7	2,515.9	1,305.5	6,919.1	74.5
Recommended to be added to basic network	389.5	439.8	136.2	965.4	10.4
Recommended to be transferred to P.R.A.	373.2	371.6	—	744.8	8.0
Recommended to be abandoned	241.1	419.1	—	660.5	7.1
Provincial total	4,101.8	3,746.4	1,441.7	9,289.8	100.0
Prairie provinces					
Basic network, guaranteed until 2000	9,312.5	9,360.7	1,305.5	19,978.9	66.2
Recommended to be added to basic network	1,808.7	972.2	136.2	2,917.1	9.7
Recommended to be transferred to P.R.A.	2,336.0	1,435.7	—	3,771.7*	12.5
Recommended to be abandoned	2,103.6	1,381.5	—	3,485.0	11.8
System total	15,560.8	13,150.1	1,441.7	30,152.7	100.0

There has been much recent concern about the scale of the proposed abandonment of branch lines. The report of the Royal Commission on Transportation in 1961-62 (the MacPherson Commission) recommended major abandonment of railway lines on the prairies. By the end of 1964 there were applications by the railway companies for the abandonment of over 6,400 km of prairie line, almost half of which were in Saskatchewan. Because of considerable local dissatisfaction over these proposals and the piecemeal basis on which they were being considered, a comprehensive review of rail transportation on the prairies was undertaken by the federal government.

Under the terms of the subsequent *National Transportation Act,* passed in 1967, a freeze on the abandonment of railway lines in the prairie network was declared by the federal government. Almost 27,350 km were thus protected against abandonment, at least until 1975. Under new Orders-in-Council 19,980 km were declared basic railway network and applications for abandonment are prohibited until the year 2000. This new Order-in-Council left 10,138 km of railway unprotected.

In October of 1975 the Hall Commission on Grain Handling and Transportation was established to consider the future of these 10,138 km of prairie branch rail lines (5,549 km in Saskatchewan). The Hall Commission in 1977 recommended that 2,917 km (1,682 km in Saskatchewan) be added to the basic network category, 3,771.6 km* (2,060 km in Saskatchewan) are recommended to be placed under the jurisdiction of the Prairie Rail Authority for their continuing assessment, and 3,485 km (1,806 km in Saskatchewan) are recommended for abandonment over a five year period (Table 1-4). Included in the recommendation for abandonment are 859.7 km (374.5 km in Saskatchewan) of rail line which were not in use and were eligible for abandonment in June, 1977.

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* This includes 36 km of new construction

Road transportation:

The first surveys of the province provided for a very liberal roadway allowance in order to ensure easy communication from farm to market centre, and by 1921 there were about 337,922 km of road allowance in Saskatchewan. The difficulty of constructing a satisfactory road network of this magnitude at that time is indicated by the fact that there were only about 2.5 persons to every kilometre of road allowance. Early highways policies were dictated by the immediate necessity of providing pioneer farmers with roads to the nearest railway centre. The rapid extension of settlement and the general absence of good road-making materials made graded earth roads the only practicable solution. However, tremendous increases in motor vehicle traffic soon necessitated a change of policy. In 1921 there was one motor vehicle to every 12 persons in the province, compared with the national average of one to every 19 persons.

A highway system was initiated in 1922. The proposed network was planned to comply with *The Canada Highway Act* of 1919, which provided for a per capita grant to each province. At the beginning of the program there were only 16 km of gravel road, but there were 16,100 and 201,200 km respectively of improved and unimproved earth road. The program provided for the construction of gravel and oil-gravel surfaced highways and all-weather trunk highways. By 1940 there were more than 6,437 km of gravel road and slightly more than 160 km of bituminous surface. Apart from a decline during the 1930's, the number of motor vehicles in the province continued to increase rapidly, and recent increases in their number and size have necessitated further provision of improved road surfaces. Between 1946 and 1966 the number of vehicles in the province trebled and the length of surface road increased from under 16,000 km to 92,000 km

In 1973 Saskatchewan had a total of 207,592 km of streets and roads, of which 18,462 km were provincial highways. By 1977 Saskatchewan had 19,302 km of provincial highways. All of the principal centres in the province are linked by high-quality, all-weather roads.

The construction and maintenance of roads in a vast settled area like Saskatchewan has always been difficult, but the trend toward the centralization of services into fewer and larger centres has heightened the need for all-weather roads. The relative costs of the road system are indicated by the fact that the number of kilometres per capita of both surfaced and earth roads is higher in Saskatchewan than in any other province.

Air transportation:

During the late 1920's commercial flying became common; bush pilots operated in the north and small air transport companies were formed. In 1930 the Prairie Air Mail Service was inaugurated by Western Canada Airways. The service between Winnipeg and Calgary, a night run, represented the first scheduled night flights in Canada. The runs between Regina and Edmonton via Sasktoon and North Battleford were scheduled for daytime flying. These airmail routes functioned until 1932, when the project was discontinued because of the depression.

The history of commercial aviation in Saskatchewan in its presents form commenced in 1937, when legislation inaugurated the Trans-Canada Airlines system. This was followed by the establishment of the Canadian Pacific Airline service. For many years after the Second World War the most important of the regional airlines serving Saskatchewan was Saskatchewan Government Airways (renamed Saskair in 1962), a Crown corporation formed in 1947 to provide air service to northern communities which were not served by road. As well as regular passenger and mail services, the airline provided ambulance service and charter flights to northern Saskatchewan for commercial and tourist purposes. This assisted greatly in the development of mining in the north. Saskair was also responsible for the provision and maintenance of aircraft for the Department of Natural Resources forest fire detection services. In 1966 Saskair was sold to North Canada Limited (Norcanair). Apart from Air Canada service, through Regina and Saskatoon from Wiinipeg, Edmonton and Calgary, there are now three regional airlines serving the province.

To encourage the use of aircraft to smaller communities and also for air ambulance service, the provincial government has offered government grants for air strip improvement. There were 176 airports, aerodromes and landing strips in the province in 1976.

Chapter II

The resource base

A. Geology and minerals[1]

1. General

Geologically, Saskatchewan can be divided into two main parts: the north where Precambrian basement rocks outcrop, and the south, where post-Precambrian sedimentary rock formations are generally masked by recent glacial deposits (Figure 2-1). This fundamental geological division is characterized by differences in topography and mineralization between the two areas.

(i) The Precambrian Shield

The northern region, the Precambrian Shield, embodies that part of Saskatchewan north of a line drawn from Amisk Lake in the east to about latitude 57° 15' north in the west. The topography of this region is one of rock ridges separated by swamps, muskegs, and lakes. The ridges seldom rise more than 60 metres above the surrounding lake level except in the area north of Lake Athabasca, where local relief is more rugged and the ridges are as high as 213 metres.

The Shield, which extends across 5.4 million km² of northern and eastern Canada, is an important source of nickel, copper, zinc, uranium, gold, silver, iron and asbestos. The Saskatchewan sector is an important source of uranium, copper and zinc with some gold and silver, and a potential source of lead, nickel and iron (Figure 2-2).

(ii) The Interior Plain

The southern region, which includes the prairies, is flat-lying because in recent times eroded material has filled in original irregularities in the pre-glacial surface. There are only a few places, such as the Cypress Hills, where the underlying bedrock is not completely covered.

Across the southern half of the province, the Precambrian basement is covered by rock layers which represent about 600 million years of sedimentary deposition. This area is an important source of oil, gas, coal and potash and a less important source of sodium sulphate, salt and clay minerals (Figure 2-3). The greatest potential for new industry in the future lies in the exploitation of a variety of industrial minerals, such as silica sand, bentonite and kaolin clays and limestone, and the utilization of lignite as an energy source.

2. Crude oil

Crude oil was first discovered in natural rock seeps; hence the name "petroleum" or "rock oil". The term "petroleum series" is applied to solid tars, liquid oils and natural gases. Most oils contain liquid and gaseous fractions.

(i) Light-gravity oil

Light-gravity oil is found in two areas of Saskatchewan, the southeast area and the west-central area. The light-gravity area of southeast Saskatchewan is roughly triangular in shape, bounded by the International Boundary, the Manitoba-Saskatchewan boundary and a line extending from Minton to Rocanville.

Reserves of light-gravity oil in the major fields at the end of 1975 were estimated to be in excess of 35.8 million cubic metres.

(ii) Medium-gravity oil

Approximately 55 per cent of all the oil produced in the province is classified as medium-gravity. Medium-gravity oil is found in two areas in Saskatchewan, in the southeast near Weyburn and in the southwest near Swift Current. In general, the medium-gravity area lies to the north and west of the light-gravity area. The Weyburn-Midale fields, encompassing about 906 km² of Mississippian reservoir rock, represent the principal medium-gravity producing area in the southeast. The medium-gravity reservoirs of the southwest are not as extensive as those of the southeast but are generally quite prolific for their size.

Reserves of medium-gravity oil in the major fields at the end of 1975 were estimated to be 62.8 million cubic metres.

(iii) Heavy-gravity oil

Heavy-gravity oil is found in the west-central part of Saskatchewan in the areas around Lloydminster and Kindersley. There are many heavy-gravity crude reservoirs in the two areas, but the viscosity of the oil and the unconsolidated nature of the sand reservoirs generally result in low recoveries.

Reserves of heavy-gravity oil in the major fields at the end of 1978 were estimated to be slightly in excess of 14 million cubic metres.

(iv) Reserves

Saskatchewan's recoverable crude oil reserves at the end of 1975 in all fields exceeded 112 million cubic metres; by the end of 1976 these reserves had declined to 106 million cubic metres.

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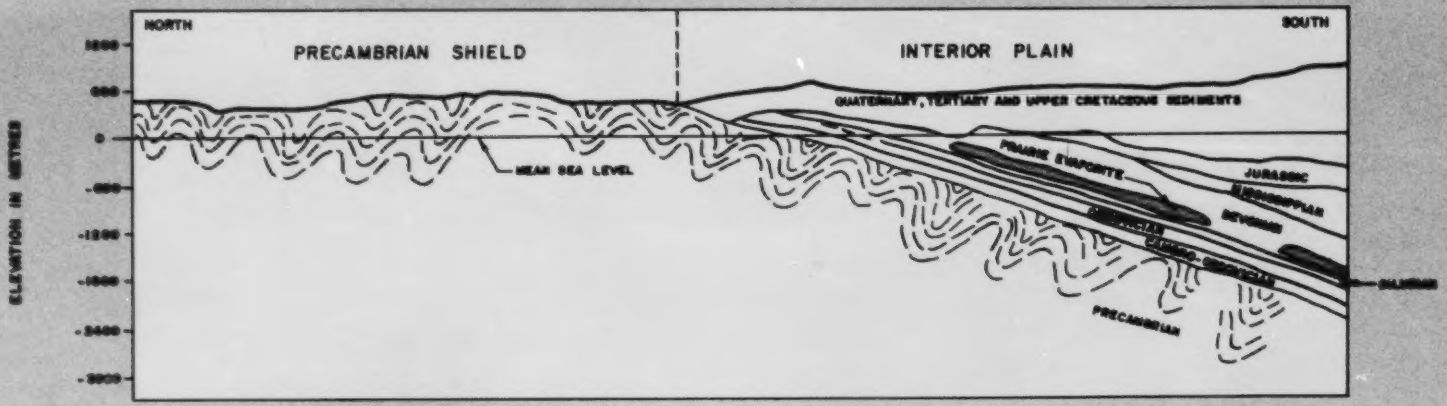
[1] The material for this section was derived primarily from:

J.A. Tweedie, *Economic Minerals of Saskatchewan*, Saskatchewan Geological Survey: Department of Mineral Resouces, 1973.

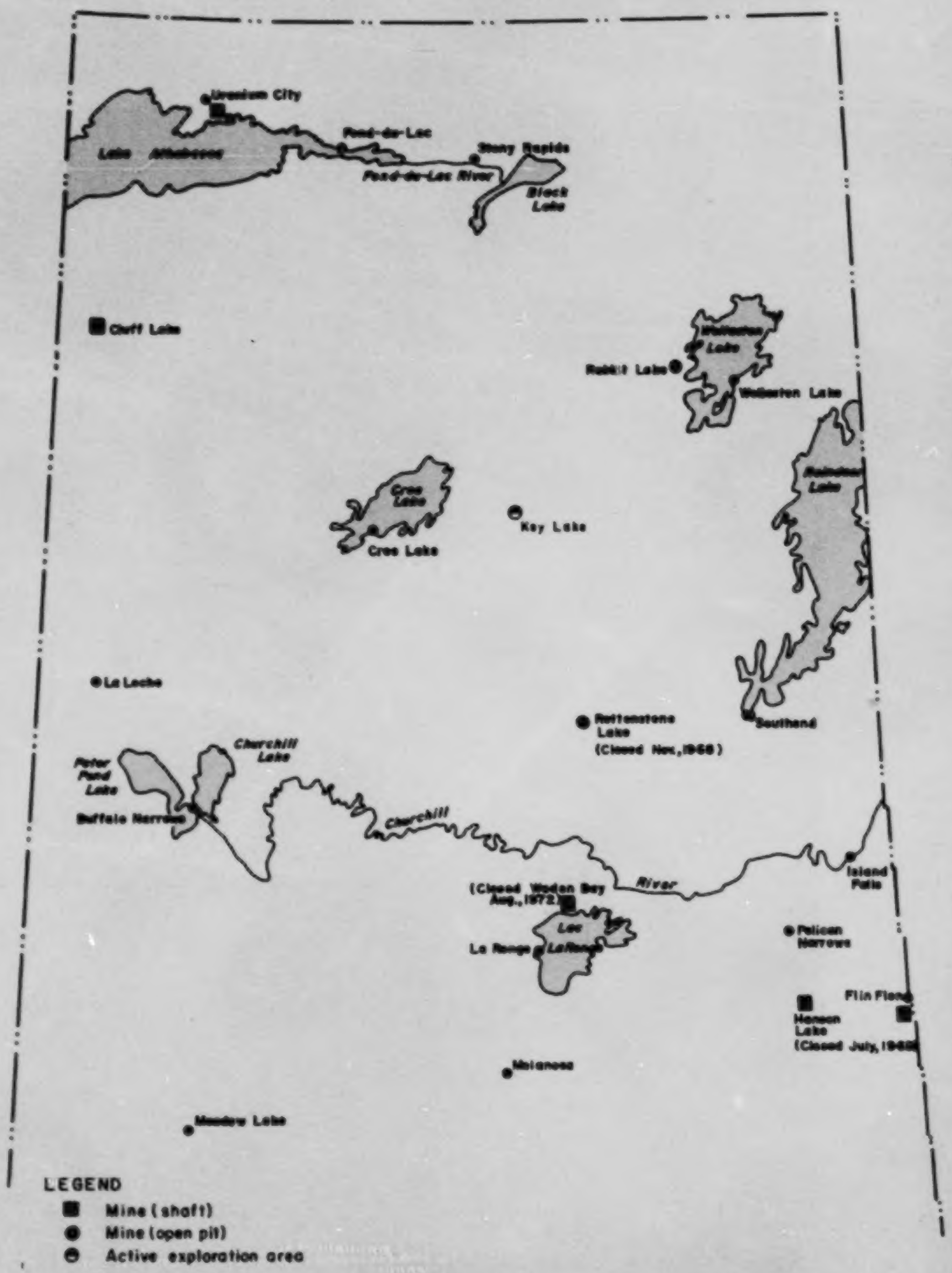
Saskatchewan Department of Mineral Resources, *Inventory and Outlook of Saskatchewan's Mineral Resources*, September, 1976.

Saskatchewan Department of Mineral Resources, *Potash in Saskatchewan*, Geological Sciences Branch, April, 1973.


NORTH
PRECAMBRIAN SHIELD
INTERIOR PLAIN
SOUTH
1200
600
0
-600
-1200
-1800
-2400
-3000
ELEVATION IN METRES
MEAN SEA LEVEL
QUATERNARY, TERTIARY AND UPPER CRETACEOUS SEDIMENTS
PRAIRIE EVAPORITE
JURASSIC
MISSISSIPPIAN
DEVONIAN
ORDOVICIAN
CAMBRO-ORDOVICIAN
SILURIAN
PRECAMBRIAN

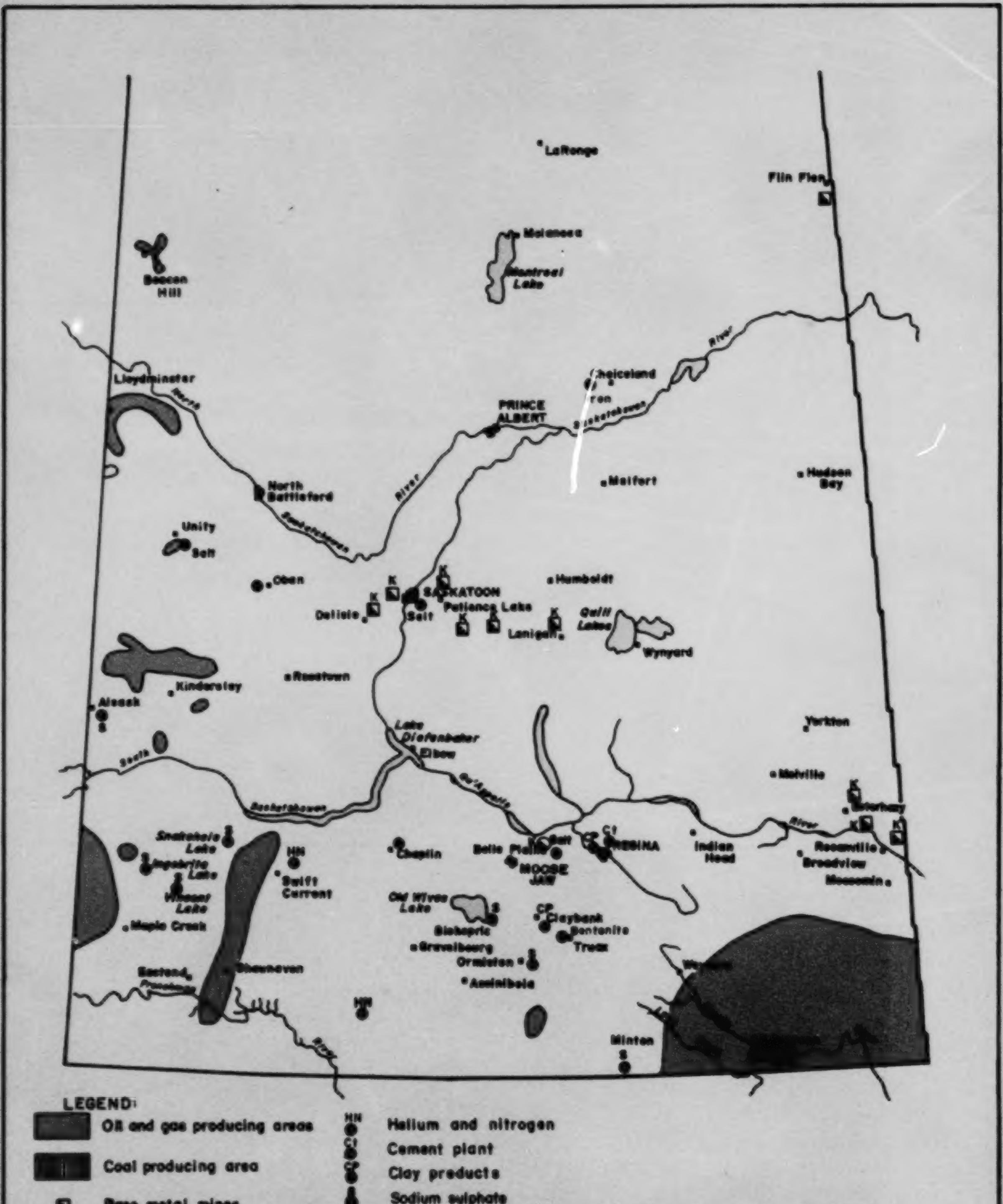
SOURCE: J.A. Tweedie, Economic Minerals of Saskatchewan, Saskatchewan Geological Survey, Department of Mineral Resources 1973, p.3.

SASKATCHEWAN DEPARTMENT OF THE ENVIRONMENT POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN DIAGRAMMATIC CROSS SECTION OF SASKATCHEWAN	FIGURE 2-1


Uranium City
Fond-du-Lac
Stony Rapids
Lake Athabasca
Fond-du-Lac River
Black Lake
Cluff Lake
Wollaston Lake
Rabbit Lake
Wollaston Lake
Reindeer Lake
Cree Lake
Cree Lake
Key Lake
La Loche
Rottenstone Lake (Closed Nov.,1968)
Southend
Churchill Lake
Peter Pond Lake
Buffalo Narrows
Churchill River
Island Falls
(Closed Waden Bay Aug.,1972)
Lac La Ronge
La Ronge
Pelican Narrows
Flin Flon
Hanson Lake (Closed July, 1968)
Molanosa
Meadow Lake
LEGEND
■ Mine (shaft)
● Mine (open pit)
◒ Active exploration area

SOURCE: Department of Mineral Resources, Inventory and Outlook of Saskatchewan's Mineral Resources, Geological Services Branch, September 1976, p.68.

SASKATCHEWAN DEPARTMENT OF THE ENVIRONMENT POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN ACTIVE MINERAL AREAS OF NORTHERN SASKATCHEWAN	FIGURE 2-2


LaRonge
Flin Flon
Molanosa
Montreal Lake
Beacon Hill
Lloydminster
Battle
Choiceland
Ton
PRINCE ALBERT
Saskatchewan
River
North Battleford
River
Saskatchewan
Melfort
Hudson Bay
Unity
Salt
Oban
K
SASKATOON
Salt
Delisle
Patience Lake
Humboldt
Lanigan
Quill Lakes
Wynyard
Rosetown
Kindersley
Alsask
S
Lake Diefenbaker
Elbow
Yorkton
Melville
South
Saskatchewan
Qu'Appelle
River
Esterhazy
Rocanville
Broadview
Moosomin
Indian Head
Belle Plaine
Salt
CI
CP
REGINA
MOOSE JAW
Chaplin
HN
Swift Current
Snakehole Lake
Ingebrigt Lake
Vincent Lake
Maple Creek
Old Wives Lake
S
Bishopric
Gravelbourg
CP
Claybank
Bentonite
Truax
Ormiston
Assiniboia
Eastend
Frenchman
Shaunavon
HN
Milk
Minton
S
LEGEND:
Oil and gas producing areas
Coal producing area
Base metal mines
Potash mines
Potash, shaft solution
HN Helium and nitrogen
CI Cement plant
CP Clay products
S Sodium sulphate

SOURCE: Department of Mineral Resources, Inventory and Outlook of Saskatchewan's Mineral Resources, Ecological Services Branch, Sept., 1976, p.70.

SASKATCHEWAN DEPARTMENT OF THE ENVIRONMENT POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN ACTIVE MINERAL AREAS OF SOUTHERN SASKATCHEWAN	FIGURE 2-3

Approximately 65 per cent of the reserves are located in the southeast part of the province in reservoirs of Mississippian age. Not more than one-third of the Mississippian rocks have been adequately explored, and there is a high probability of the discovery of additional reserves.

3. Natural gas

Natural gas in Saskatchewan is classified as either associated gas or non-associated gas. Associated gas occurs in solution in oil, or else it is associated with the crude oil in a common reservoir and is produced along with the oil whether or not a demand for the gas exists. Non-associated gas occurs alone in a reservoir at a relatively high pressure and may be produced on demand. Non-associated gas reserves, sometimes called "gas caps" or "high pressure" gas, are located in the western part of the province in the same general vicinity as the oil production.

Not all of the oil produced in Saskatchewan carries gas to the surface in quantities large enough to warrant collection. Associated gas reserves with sufficient volumes of gas for production are located near Steelman, Smiley, Gull Lake and Coleville.

(i) Reserves

Saskatchewan's recoverable, dissolved and associated gas reserves were estimated at 1.59 billion cubic metres at the end of 1976. Non-associated gas reserves were estimated at 20.6 billion cubic metres at the end of 1976.

The prospects for natural gas reserves in Saskatchewan are not as promising as those for oil because:

(a) the reserves of non-associated gas available today are in reservoirs that are restricted in size and at shallow depths;

(b) most of the non-associated gas reserves were found during the search for oil and therefore exist above or at the same depth as the known oil reservoirs in any specific area. The distribution and thickness of the pre-Palaeozoic rocks suggest that additional reserves of non-associated gas may be expected at greater depths.

4. Lignite coal

Lignite is an immature form of coal, having a higher ash residue and a lower thermal value. Several seams of lignite coal exist in the Ravenscrag formation of Palaeocene Age. This formation occurs almost continuously across the southern part of Saskatchewan (Figure 2-4).

Eight separate seams have been found in the Estevan area. The average thickness of these seams is 1.5 to 3 m, with maximum development of 4.6 m. The deposits extend for approximately 390 sq km, centering on Township 2, Range 7, West of the Second Meridian.

The Wood Mountain-Willow Bunch area has a potential productive area that extends for more than 2,500 km². It is centred on Township 4, Range 27, West of the Second Meridian.

Thirty-nine hundred sq km in the Shaunavon area are considered to be potential lignite land. Because of sparse information and the great variation in overburden thickness, no estimate of recoverable reserves by strip mining methods has been made.

(i) Reserves

The host Ravenscrag formation, which covers approximately 26,000 km², is relatively unexplored outside the known coal fields.

Table 2-1 shows that the estimated economic coal reserves of southern Saskatchewan are 5,147.77 million tonnes. Additional reserves of coal, considered to be uneconomical to remove at this time, exceed 5.4 billion tonnes. This is about ten per cent of Canada's estimated coal reserves.

Table 2-1

Estimate of economic coal reserves in southern Saskatchewan

Area	Millions of tonnes
Estevan	971.15
Willow Bunch	2,586.29
Wood Mountain	930.56
Shaunavon-Cypress	659.76
Total	5,147.76

5. Uranium

Pitchblende is a non-crystalline form of uraninite or uranium oxide. By definition it contains only minor quantities of impurities such as thorium. All of the economic deposits of uranium in the Beaverlodge district consist of pitchblende deposits which were probably formed from hydrothermal solutions. Uranium ore is mined at Beaverlodge Lake near Uranium City and at Rabbit Lake near Wollaston Lake. A proposed mine at Cluff Lake, south of Lake Athabasca, has been approved. Other potential mines are located near Key Lake, Midwest Lake and at Maurice Bay on the north shore of Lake Athabasca. Demand for uranium is likely to increase as oil and natural gas reserves decline.

(i) Reserves

Measured and indicated reserves of uranium oxide were 67,340 tonnes at the end of 1976. This represents about one-quarter of the proven uranium reserves in Canada.

6. Potash

Potash is a general term applied to minerals containing the element potassium. The quality or grade of the mineral is expressed in terms of potassium oxide, regardless of the actual chemical composition.

Potash deposits occur in the upper 45 to 60 metres of the Prairie Evaporite of Middle Devonian age. The Prairie Evaporite is a thick sequence (a maximum of 183 metres) of salts formed by precipitation from oversaturated water solutions.

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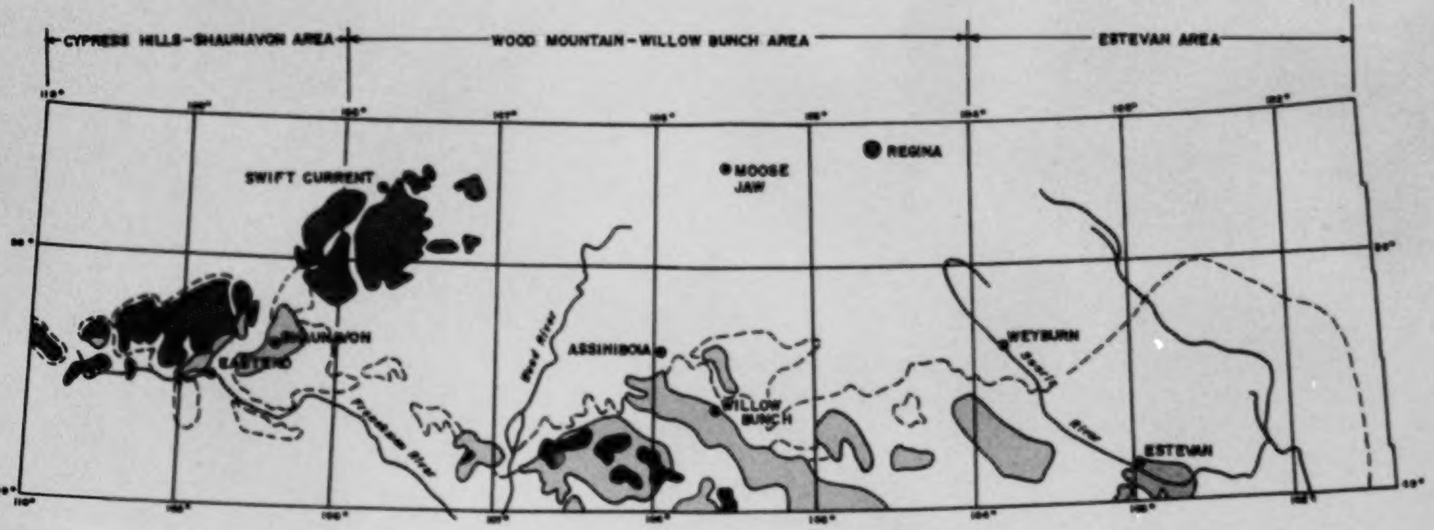
LAND USE IN SASKATCHEWAN
EXISTING AND POTENTIAL
COAL FIELDS
IN THE
RAVENSCRAG FORMATION

FIGURE
2-4


CYPRESS HILLS-SHAUNAVON AREA
WOOD MOUNTAIN-WILLOW BUNCH AREA
ESTEVAN AREA
SWIFT CURRENT
MOOSE JAW
REGINA
SHAUNAVON
EASTEND
ASSINIBOIA
WILLOW BUNCH
WEYBURN
ESTEVAN
Wood River
Frenchman River
Souris River
110°
109°
108°
107°
106°
105°
104°
103°
102°
50°
49°

LEGEND:

- ■ Wood Mountain Formation (gravel and sand)
- ■ Cypress Hills and Swift Current Formation (conglomerate and sandstone)
- ⬚ Edge of Ravencrag Formation
- ▨ Producing Coalfields
- ░ Potential Coalfields

SOURCE: J. A. Tweedie, Economic Minerals of Saskatchewan, Saskatchewan Geological Survey: Department of Mineral Resources, 1973, p. 7.

The northern edge of the potash deposits extends from Lloydminster on the west in a southeasterly direction to east of Esterhazy on the Manitoba boundary (Figure 2-5). At the northern edge of this area the deposits are found at depths of approximately 760 metres. The beds dip to the south; at the International Boundary they are found at depths of 2.1 to 2.4 thousand metres.

The major potash minerals found in Saskatchewan are sylvite and carnallite. Sylvite is sought and mined in preference to carnallite, as it contains 46.3 per cent more potassium equivalent and is not contaminated with undesirable magnesium.

(i) **Reserves**

Potash reserves within reach of the conventional shaft (those at depths of less than 1,065 metres and grading 25 per cent potassium or better) have been estimated at 4.5 billion tonnes of potassium.

Sixty-three billion tonnes of potassium are estimated to be available for recovery by applying solution-mining techniques. Therefore, the total recoverable reserves are estimated to be 67 billion tonnes of potassium.

7. Sodium sulphate

Concentrations of sodium sulphate occur in undrained basins under semi-arid conditions. The precipitation runoff from land adjacent to these basins leaches the mineral from the soil and carries it in solution, and cooling of the water below the saturation point during the winter results in the deposition of mineral crystals on the lake bottom. The repetition of this process over many years has built up a considerable thickness of sodium sulphate in some basins. In its crystalline state the mineral is known as mirabilite.

(i) **Reserves**

There are twenty-one major deposits of sodium sulphate in the province (Figure 2-6), with total reserves of about 55 million tonnes of salt cake. A further eleven deposits contain reserves of 90,000 to 450,000 tonnes each, and another thirteen contain less than 90,000 tonnes each. Promising deposits are those at Muskiki, Lyden, Vincent, Verlo East, Ceylon and Quill Lakes.

8. Salt (sodium chloride)

Most salt deposits found in Saskatchewan have been found during drilling operations carried out in the search for oil. An excellent example of such a find is the huge salt deposit found near Unity in 1946, during the drilling of a wildcat oil well.

(i) **Reserves**

No accurate estimate of the reserves of salt in Saskatchewan is available.

9. Copper and zinc

It is convenient to discuss these metals together, as they usually occur together. The form and origin of base metal ore bodies are much more variable than those of industrial mineral deposits, and often the information that is available about them is not conclusive.

An ore body rich in copper (2.4 per cent) and zinc (3.1 per cent) and associated with iron sulphides is located in the vicinity of Flin Flon. The sulphides of this ore body are massive and occur in six irregular lenses with an average size of 50 metres by 275 metres by 760 metres.

(i) **Reserves**

The Hudson Bay complex of mines in the Flin Flon area has reserves of 15.9 million tonnes in Saskatchewan and Manitoba. These represent approximately 11 years of production at present production rates.

Exploration continues in northern Saskatchewan, and as techniques improve, it is anticipated that one or more base metal mines will be found. No meaningful estimate of these reserves can be made at this time.

10. Precious metals

Gold and silver are two of the precious metals recovered in Saskatchewan. Three general areas of the Precambrian region of Saskatchewan — Flin Flon-Amisk Lake, Lac la Ronge and the north shore of Lake Athabasca — have known mineralization which could be developed if economic conditions become favourable.

(i) **Reserves**

No meaningful estimate can be made of the gold and silver reserves of Saskatchewan at this time.

11. Clays

Clays of varying degrees of usefulness are abundant in the sedimentary areas of southern Saskatchewan. The clays of greatest interest at the present time are found in the Ravenscrag, Frenchman, Battle and Whitemud formations (all in the southern part of the province). These formations are Tertiary and Upper Cretaceous in age.

(i) **Reserves**

More than 900,000 million tonnes of proven reserves of ball clays exist in deposits near Willows, Flintoft, Readlyn and Willow Bunch.

Clay deposits suitable for firebrick at Flintoft have proven reserves of over 900,000 million tonnes, while deposits of stoneware clay near Eastend and Goodwater have proven reserves of a million tonnes each.

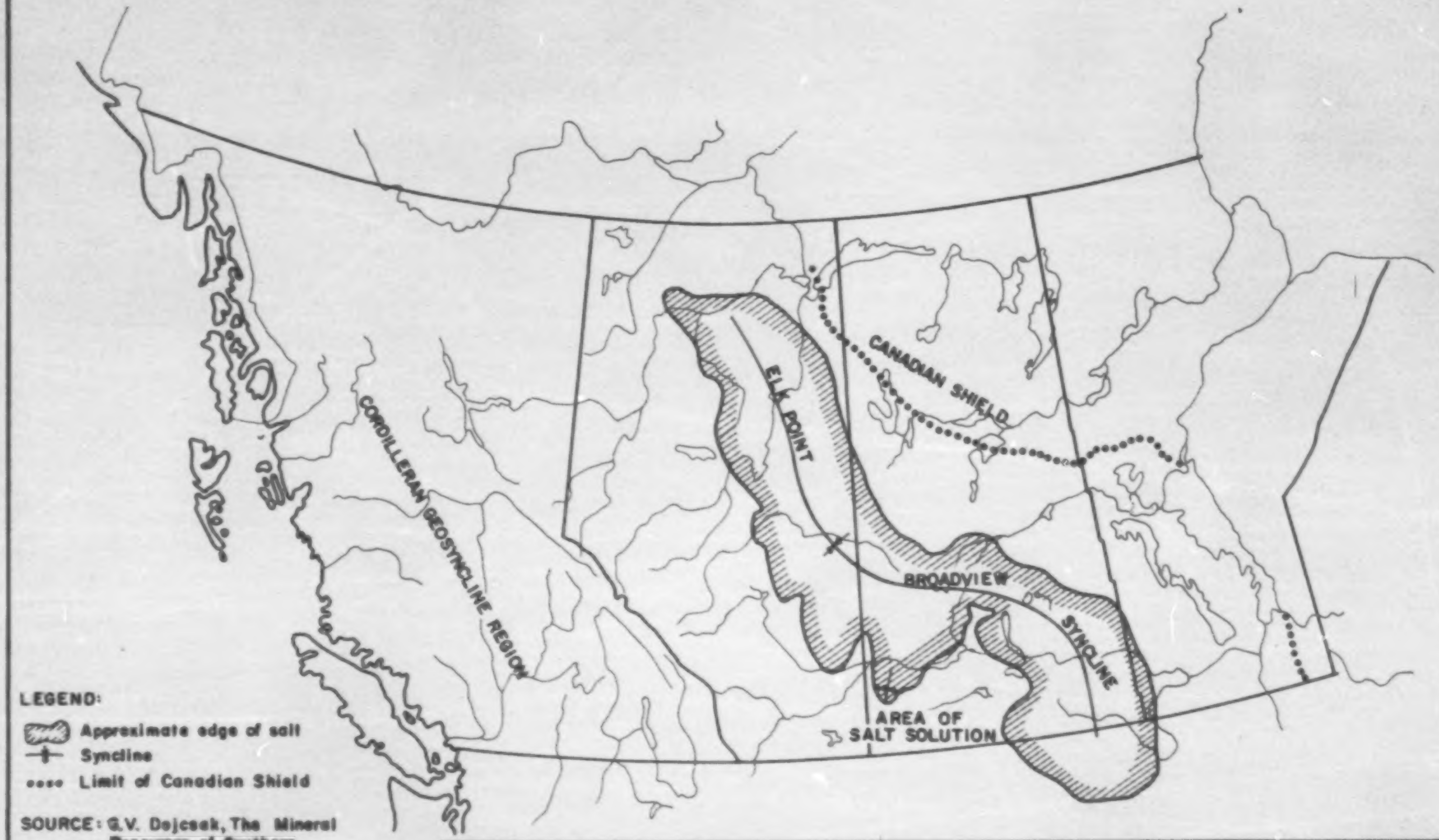
12. Sand, gravel and quartz flux

Sand and gravel deposits are widespread throughout Saskatchewan. Generally, recoverable sand and gravel is found in surface deposits.

Quartz flux is a silica sand used in copper smelting operations, such as at Flin Flon.

(i) **Reserves**

Estimates on the reserves of sand and gravel and quartz flux in Saskatchewan are not available.


CANADIAN SHIELD
ELK POINT
BROADVIEW
SYNCLINE
CORDILLERAN GEOSYNCLINE REGION
AREA OF SALT SOLUTION

LEGEND:

▨ Approximate edge of salt
┼ Syncline
•••• Limit of Canadian Shield

SOURCE: G.V. Dojcsak, The Mineral Resources of Southern Saskatchewan, from: Background Papers Southern Prairies Field Excursion, August, 1972

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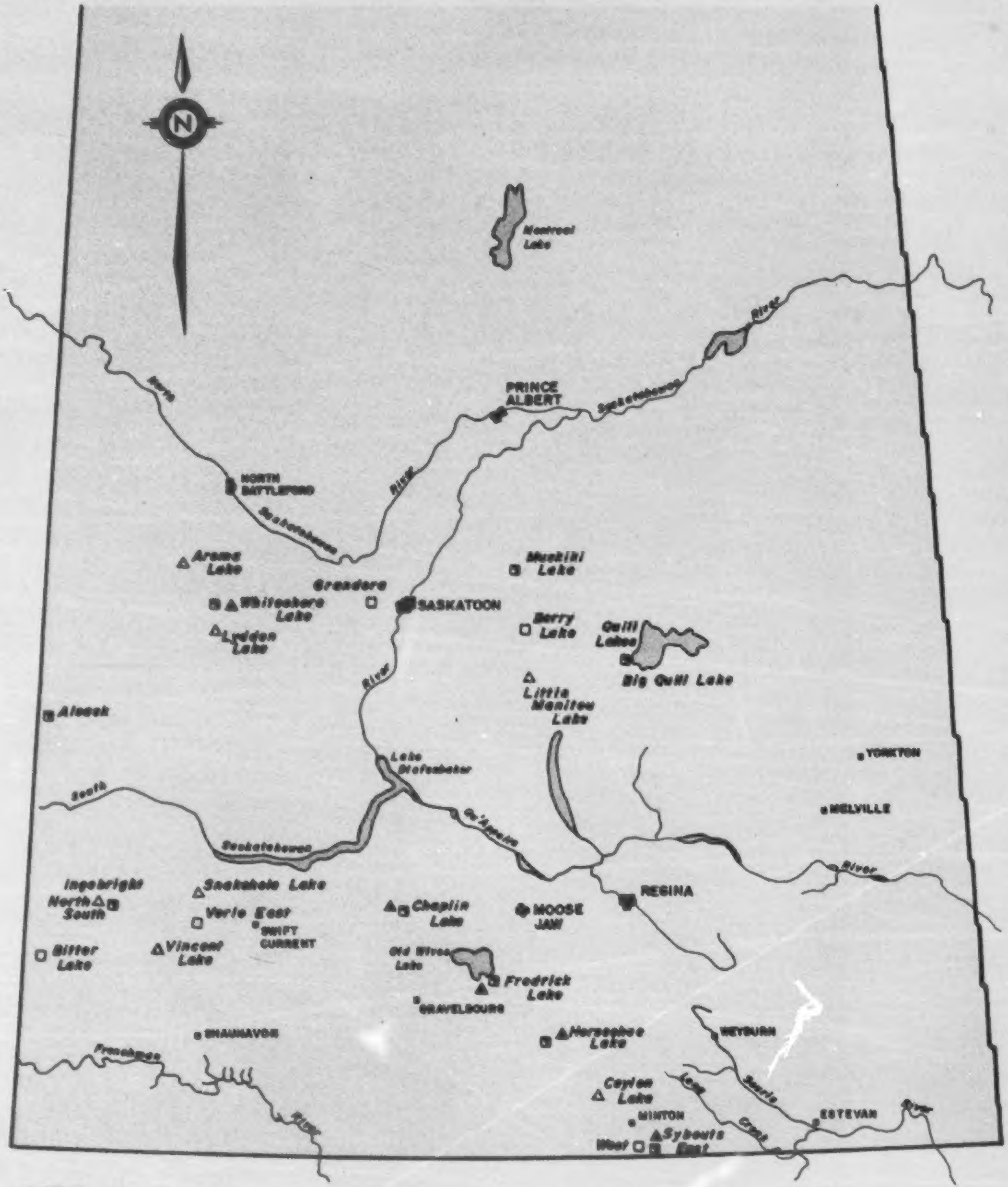
LAND USE IN SASKATCHEWAN

THE ELK POINT SALT BASIN

FIGURE
2-5


N
Montreal Lake
North Saskatchewan River
PRINCE ALBERT
NORTH BATTLEFORD
River
Saskatchewan
River
Arena Lake
Muskiki Lake
Grandora
SASKATOON
Whiteshore Lake
Berry Lake
Quill Lakes
Lydden Lake
Big Quill Lake
River
Little Manitou Lake
Alsask
YORKTON
Lake Diefenbaker
South
Qu'Appelle
MELVILLE
Saskatchewan
River
Ingebright North South
Snakehole Lake
REGINA
Chaplin Lake
MOOSE JAW
Verlo East
SWIFT CURRENT
Bitter Lake
Vincent Lake
Old Wives Lake
Fredrick Lake
GRAVELBOURG
SHAUNAVON
Horseshoe Lake
WEYBURN
Frenchman
River
Ceylon Lake
Long Creek
Souris
ESTEVAN
River
MINTON
West
Sybouts East

LEGEND:

▲ Operating Plant

▣ Deposits of over 1,800,000 tonnes

△ Deposits of 900,000 to 1,500,000 tonnes

□ Deposits of 450,000 to 900,000 tonnes

SOURCE: J.A. Tweedie, Economic Minerals of Saskatchewan, Saskatchewan Geological Survey: Department of Mineral Resources, 1973, p. 13.

SASKATCHEWAN DEPARTMENT OF THE ENVIRONMENT POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN MAJOR SODIUM SULPHATE DEPOSITS AND SODIUM SULPHATE PLANTS IN SOUTHERN SASKATCHEWAN	FIGURE 2-6

13. Bentonite

Bentonite is formed from volcanic ash altered by seawater and is used for the production of well drilling mud, foundry moldings and pellets. It is a clay composed mainly of the mineral montmorillonite, with some sodium and calcium. Bentonites react to moisture in different ways and are therefore classified as either "swelling" or "non-swelling". "Swelling" bentonites can absorb large amounts of water, whereas "non-swelling" bentonites absorb very little water.

Bentonite is widely distributed in Saskatchewan. The largest known deposits of non-swelling calcium bentonite occur in the Vermillion River formation (Upper Cretaceous) in the east-central part of the province and on the Swan River north of Pelly. Similar material is found in the Riding Mountain formation in the eastern part of Saskatchewan. Other non-swelling bentonites of Tertiary age are found in the Ravenscrag formation west of Rockglen. A large deposit of semi-bentonite of Upper Cretaceous age occurs at Knollys along the Frenchman River valley. Swelling bentonites are found in the St. Victor-Pickthall area and from Twelve Mile Lake eastward along the Big Muddy valley in the southern part of the province (also in the Ravenscrag formation).

(i) Reserves

Estimates on the reserves of bentonite in Saskatchewan are not available.

14. Helium

This inert gas, which has many unique properties, was discovered north of Swift Current during the course of oil exploration in 1958. This discovery represented the first significant find in the western world outside the United States. A second discovery was made approximately 120 km southeast of the former location. One helium plant operated near Swift Current from 1963 to 1977. The Swift Current plant stopped production due to excessive amounts of water within the gas reserves.

(i) Reserves

Estimates on the reserves of helium in Saskatchewan are not available.

15. Sulphur

A thin bed of sulphur was encountered during the drilling of a wildcat oil and gas well at Leoville in mid-1968. This was the first reported find of elemental sulphur in Saskatchewan.

Sulphur is also available as a by-product from the crude oil wells in southwestern Saskatchewan and from the Steelman gas plant in southeastern Saskatchewan.

16. Future assets

(i) Cement rock

A geological survey of the Pasquia Hills revealed that a large part of the Boyne shales of the Vermillion River formation were calcareous and that samples resembled the chemical composition of cement rock. The area is close to rail and road transportation.

(ii) Iron

Some potential economic deposits of iron ore are known to exist in the Precambrian rocks of Saskatchewan. The best known deposits are near Choiceland, 96 km northeast of Prince Albert. Drilling at this site in 1955 confirmed the presence of about 135 million tonnes of 30 per cent iron, almost entirely free of impurities. In April of 1971 another large deposit was found about 30 km to the north. The top of this deposit was situated at a depth of 490 metres, 120 metres closer to the surface than the first discovery.

There are two other known deposits of iron ore in the Precambrian Shield proper. One is northwest of Black Lake, less than 30 km from the settlement of Stony Rapids. The other is approximately six km east of the Nyberg Lakes.

(iii) Magnesium

According to a survey conducted in 1953, there were at that time six alkaline lakes in central Saskatchewan which contained significant quantities (concentrations greater than the 0.13 per cent found in seawater) of magnesium in solution, along with other salts. These lakes are listed in Table 2-2.

Table 2-2

Magnesium in Saskatchewan lakes

Lake	Per cent by weight	Tonnes
Big Quill	0.56	1,996,000
Redberry	0.194	1,678,000
Basin	0.157	771,000
Little Manitou	2.3	295,000
Aroma	0.58	109,000
Muskiki	1.36	100,000

Carnallite, one of the common Saskatchewan sources of potash in the Prairie Evaporite formation, also contains appreciable magnesium.

(iv) Manganese

A geological survey of the Pasquia Hills established the presence of manganese nodules in great abundance in that area. The Bainbridge River has cut through the Riding Mountain formation about 80 km north of Hudson Bay and exposed the deposit. The nodules are low-grade, but they could be simply and cheaply recovered and the deposit is close to Highway 109 and the Canadian National Railway.

(v) Marl

Sturgeon Lake near Prince Albert is the site of a large marl deposit containing about 21,000,000 tonnes grading 35 per cent or more calcium carbonate, of which 16,000,000 tonnes graded 50 per cent or more calcium carbonate. After beneficiation (blending with smaller amounts of imported limestone) it could be used in the manufacture of cement.

(vi) Quartzite pebbles

In southwestern Saskatchewan there are numerous deposits of almost spherical pebbles, varying in size from 1.2 cm to 20 cm in diameter and composed mainly of quartzite. Similar pebbles are used as grinding media in ball mills to reduce non-metallic ores. Tests on Saskatchewan pebbles have shown that they are comparable in quality to those generally in use.

(vii) Silica sand

Aside from the quartz sand used as smelter flux, Saskatchewan has four major deposits of good grade silica sand. One, on the Red Deer River, is under active investigation. The others are situated on the south shore of Wapawekka Lake east of Lac la Ronge, on the Bow River between Montreal Lake and Lac la Ronge, and on Hanson Lake. All of these deposits are in the wooded unsettled areas.

(viii) Pumicite (volcanic ash)

Another major source of silica are the large deposits of pumicite (commonly termed volcanic ash) which occur near Duncairn, Neidpath, Rockglen, St. Victor and Waldeck in southwestern Saskatchewan. Deposits of pumicite also occur south of Beverley on Swift Current Creek, at Wood Mountain, at Cypress Hills and north of Saskatchewan Landing. The accumulation of windborne ash has created deposits which vary in thickness from 0.3 m to 3.7 m.

B. Soils[2]

Systematic soil surveys have been undertaken only in the settled area of the province; that is, roughly south of a line from Cumberland House to Meadow Lake. The existing soil information for northern Saskatchewan, less detailed and less accurate, is based on scattered soil examinations and on the interpretation of climatic, forest and geologic studies.

1. Soil forming factors

Soils are formed by the combined effects of the natural factors of climate, vegetation, parent (geological) material, topography, drainage and time. To these may be added man, who plays a part in changing the original soil.

Over broad regions and long periods of time, differences in climate and the related natural vegetation are the most significant factors in soil formation. In Saskatchewan, differences in climate have produced a parallel-banded arrangement of vegetation. In the southwest there is a dry (semi-arid) climate and prairie vegetation; this complex gives way to parkland to the east and north and to mixedwood forest as the climate becomes more moist. Still farther north there is a subarctic climate, and coniferous forest is dominant. These variations in climate and vegetation are reflected in the colour and other characteristics of the surface layers of soils. Soil colour varies with the amount of organic matter in the soil, which in turn depends upon the amount and kind of vegetative cover. Thus light brown soil colours are associated with the thin grass cover of the dry southwest, darker brown to black colours with the thicker stands of grasses in more humid sections, and lighter (grayish) colours with the forested areas, where both vegetation and other biological conditions are less favourable to the accumulation of organic matter. Major soil zones are identified by the prevailing colours of the surface layers.

Topography and drainage are related factors which influence soil development mainly through their effect on soil moisture and soil temperature. Uneven (undulating to rolling) topography is common in glaciated areas; the landscape generally consists of a succession of knolls or ridges, intermediate slopes, and flat lower land usually containing sloughs. The knolls and ridges are the driest sites, as most of the rainfall is lost through runoff and little water is available for plant growth. Hence these soils are thin and low in organic matter. On the gently-sloping land more water enters the soil, resulting in deep, well-drained soils and better plant growth. The lowest lands frequently receive too much surface water, and their soils become poorly drained. Topography and drainage also affect the temperature of the soil; north and east facing slopes are cooler and moister than south and west facing slopes.

2. Major soil zones in Saskatchewan

There are seven major soil zones in Saskatchewan: Brown, Dark Brown, Black, Thick Black, Gray Wooded, Dark Gray Wooded and Podzol (see Figure 2-7). These zones form bands across the province, generally running in a northwest-southeast direction.

3. Major types of soil profiles in Saskatchewan

(i) Chernozemic soils

These Brown, Dark Brown, Black and Dark Gray soils are moderately-drained to well-drained and reflect the influence of climate and vegetation on soil development in the grassland region of Saskatchewan. The surface horizons of grassland soils vary in colour from light brown to black, the darker colours being associated with a greater organic matter content resulting from more favourable climatic conditions and a denser or taller growth of vegetation. The Chernozemic soils generally have well-structured, brownish upper subsoils over light-coloured calcareous (or "limy") lower subsoils.

(ii) Solonetzic soils

These soils occur in both the grassland and forest regions of Saskatchewan. Brown, Dark Brown, Black, Dark Gray, Dark Gray Wooded and Gray Wooded types have been recognized. Although Solonetzic soils vary in surface colour according to their zonal (climatic-vegetational) position, their dominant characteristics are associated with parent materials containing sodium and magnesium salts, and with a complex sequence of chemical and physical changes in the parent materials that produce a group of distinctive profiles. The Solonetzic soils are distinguished from the Chernozemic soils by their poorly-structured, hard, compact subsoils, which are characterized by columnar structures, an accumulation of clay, and the presence of significant percentages of exchangeable sodium or exchangeable sodium plus magnesium. The Solonetzic soils are also usually associated with more saline parent materials.

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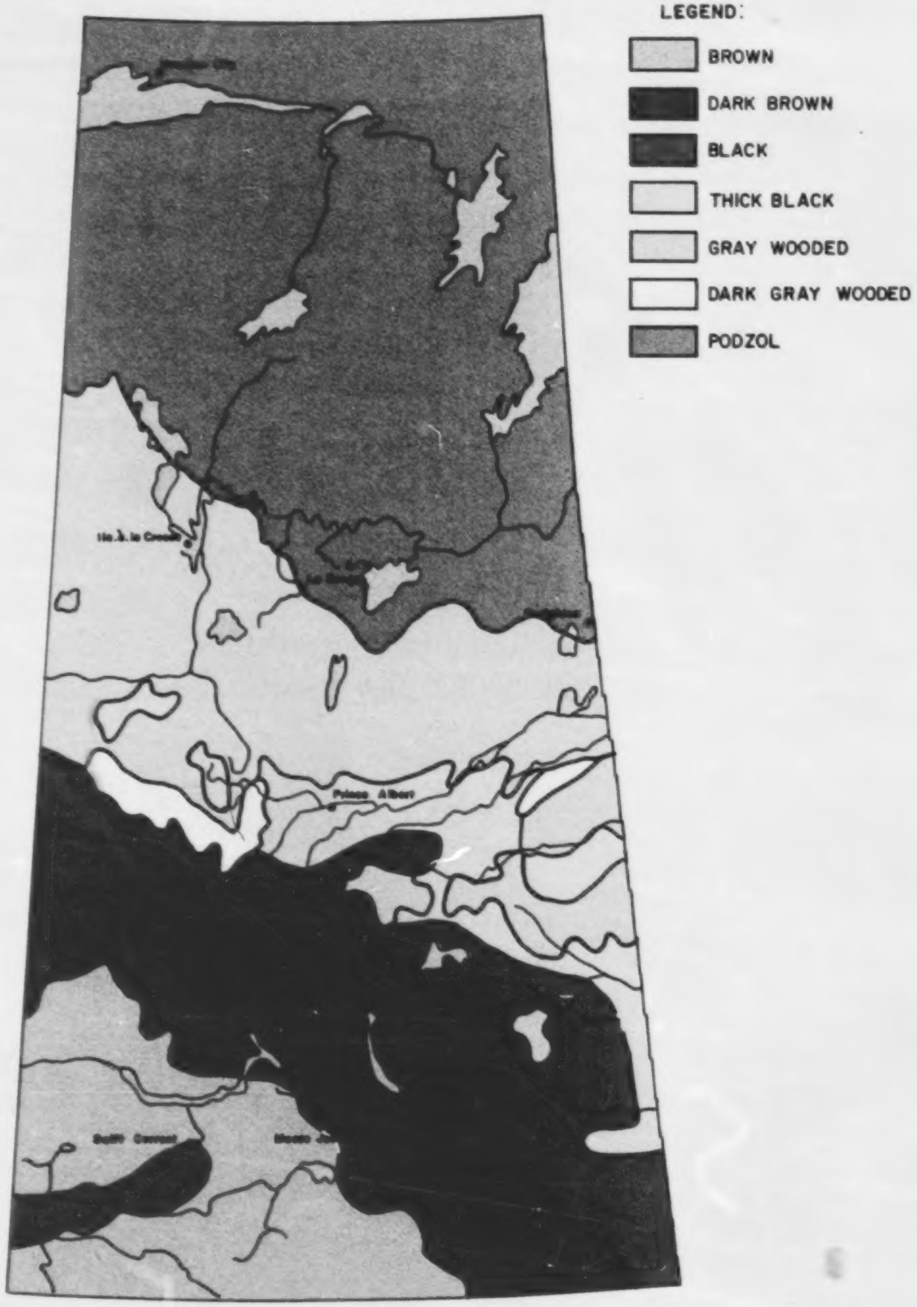
[2] The material for this section was derived primarily from;

H. C. Moss, *A Guide to Understanding Saskatchewan Soils*, Extension Publication 175 (University of Saskatchewan: Department of Soil Science, 1965).

J. Howard Richards and K. I. Fung, *Atlas of Saskatchewan* (Saskatoon: University of Saskatchewan, 1969), p. 72.

J. A. Shields, H. P. W. Rostad, and J. S. Clayton, *Inventory of Saskatchewan Soils and Their Capability for Agricultural Use*, Publication No. M13 (Saskatoon: Saskatchewan Institute of Pedology, January 1970).


LEGEND:
BROWN
DARK BROWN
BLACK
THICK BLACK
GRAY WOODED
DARK GRAY WOODED
PODZOL
Ile à la Crosse
La Ronge
Prince Albert
Swift Current
Moose Ja

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LAND USE IN SASKATCHEWAN

MAJOR SOIL ZONES
OF
SASKATCHEWAN

FIGURE
2-7

(iii) Gray Podzolic soils

These soils are associated with forest vegetation. In their virgin state they are characterized by surface layers of organic material overlying light-coloured, eluviated, platy-structured horizons, and darker coloured, finer textured horizons of massive to blocky or weakly prismatic structures. The parent materials usually contain lime carbonate, but they may be lime-free.

(iv) Regosolic (weakly developed) soils

These soils, which occur in all zones, represent young or immature profiles. Hence they lack well developed soil horizons and are characterized by very thin or absent surface horizons over the parent material. Upper subsoils are also absent, and the Regosolic soils frequently consist solely of parent material.

(v) Gleysolic (meadow) soils

These soils occur in all zones, but their dominant characteristics are determined by topographic and drainage features that result in wet to very wet (saturated) profiles and periodic conditions of poor aeration. Therefore, these soils occur chiefly in poorly drained to undrained flat to depressional areas. The vegetation includes moisture-loving grasses, sedges, and other plants associated with meadow and marsh land. Gleysolic profiles usually have organic or mineral surface horizons, or else both may be present. In leached or eluviated profiles a poorly drained horizon occurs. The lower horizons are characterized by a dull, grayish background marked with bluish, rusty, yellowish and white spots and streaks.

(vi) Organic soils

These soils also occupy more or less permanently wet areas, but they differ from the Gleysolic soils in that they are composed chiefly of organic material (peat) developed on the surface of mineral deposits. Organic soils are characterized by variations in the type of plant material they support (sedge, moss, woody) and by variations in the degree of decomposition of such material (raw, partially decomposed, and highly decomposed peats).

4. Soil capability

The classification of soil capability for agriculture is one of the main components of the Canada Land Inventory, an inventory designed to provide a comprehensive survey of land capability and use. This classification is one of a number of groupings which can be made from soil survey or land assessment data. It is an interpretative classification of soils based on limitations affecting their agricultural use and is supplemented by information concerning their general productive capacity for common field crops.

The limitations affecting agricultural use are categorized according to both degree and kind. The degree of limitation is represented by the capability class (which forms the broadest category of the classification), while the kind of limitation is represented by the capability sub-class. The capability class level is therefore determined by the degree of limitation imposed by a particular capability sub-class. Therefore, each class may include many different kinds of soil, and the soils within any one class may require different types of management and treatment.

(i) Capability classes

The mineral soils of Saskatchewan have been grouped into a number of capability classes, ranging from the best arable (Class 1) soils, which have no significant degree of limitation, to Class 7 soils, which have such a high degree of limitation that they are unsuitable for agriculture. Briefly, soils within Classes 1, 2 and 3 are considered to be suitable for the sustained production of common field crops; Class 4 soils are physically marginal for the sustained production of field crops; Class 5 soils are suitable only for permanent pasture in areas where improvement practices are feasible; Class 6 soils are suited only to native pasture in areas where improvement practices are not feasible; and Class 7 soils are unsuitable for either field crops or permanent pasture. The important characteristics of the soils within the various capability classes are summarized in Table 2-3.

Table 2-4 provides an acreage summary of capability classes within the major soil zones of Saskatchewan. Table 2-5 gives the percentage of arable, marginal, non-arable and cultivated land within the major soil zones of Saskatchewan and within the total agricultural land areas of Saskatchewan.

It is apparent from Table 2-3 that the best class of land (Class 1) will satisfactorily grow all crops typical of the western prairie region. Furthermore, in Classes 2 to 4 the land either (a) becomes suitable for a narrower range of crops, (b) will grow all crops but with lower productivity (as in lower wheat yields, for example) or (c) will grow all crops satisfactorily if better management or improvement practices (fertilizer, for example) are provided.

Class 4, the class in which poor, marginally-arable lands are placed, occupies a key position within the rankings. Below Class 4 are lands suited only for tame native pasture or not suited to agriculture at all, while above Class 4 are lands unconditionally suited to annual crops. Therefore, an important practical application of the capability classification is the recognition of Class 4 lands (and Class 5 lands) and their introduction into a farm rotation plan which permits their best long-term use. It is also important to note that the soil areas in Classes 1 to 4 are suitable for both cultivated crops and perennial forage crops. Soils in all classes may also be suitable for forest, wildlife and recreation.

(ii) Subclass limitations

A further division of the classes into subclasses adds to the usefulness of the classification. Each of the seven capability classes includes a number of soils grouped together only because they experience the same degree of limitations for agricultural use. The capability subclass, on the other hand, represents a refined grouping of the soils within each class. Those within each subclass have the same kind of limitations for agricultural use. The ten kinds of limitations used at the subclass level are grouped into three main categories based on factors of climate, soil or terrain.

Table 2-3

Summary of the guiding criteria for capability classes in Saskatchewan

Class	Degree of limitations	Region of adaptability	Productivity
1	No significant limitations.	Wide range of field crops.	Moderately high to high, 544-680 kg/acre* (816-953 kg/acre).**
2	Moderate limitations due to climate, soil or landscape.	Fairly wide range of field crops.	Moderately high to high, 421-544 kg/acre* (653 to 816 kg/acre).**
3	Moderately severe limitations due to climate, soil or landscape.	Moderate range of field crops.	Medium to moderately high, 299-421 kg/acre* (517-653 kg/acre).**
4	Severe limitations due to climate, soil or landscape.	Physically marginal for field crops.	Low to medium, 245-299 kg/acre* (354-408 kg/acre).**
5	Serious soil or landscape limitations make them unsuitable for the production of annual crops.	Suited for the production of adapted grasses and legumes or improved pasture.	Moderately high to high.
6	Very serious soil or landscape limitations restrict their use to native grazing.	Suited only to native pasture.	Low to moderate.
7	Limitations prevent agricultural use.	Unsuited for agricultural use.	Non-productive.

* Productivity of arable Classes 1-4 is expressed in terms of long-time (1932-1961) average wheat yields in kg per acre (kg/acre).

** Estimated potential average productivity.

Source: J. A. Shields, H. P. W. Rostad, and J. S. Clayton, *Inventory of Saskatchewan Soils and Their Capability for Agricultural Use*, Publication No. M13 (Saskatoon: Saskatchewan Institute of Pedology, January 1970), p. 5.

Table 2-4

Acreage summary of capability classes within the major soil zones

Soil zone	Capability classes (acres) 1	2	3	4	5	6	7	Organic	Total acreage	Total acres cultivated
Brown		1,187,697	5,030,262	3,776,519	4,543,405	908,520	58,752		15,505,155	9,649,103
Dark Brown	480	2,239,021	9,591,257	2,346,617	2,948,609	843,428	61,312		18,030,724	13,372,263
Black	546,009	6,069,715	2,866,914	1,042,861	3,594,414	757,040	80,464	2,160	14,959,577	9,114,964
Thick Black	1,015,685	1,083,191	410,696	111,828	813,367	152,704	21,168		3,608,639	2,444,275
Dark Gray	148,875	371,087	335,183	42,519	232,725	35,548	9,296	13,120	1,188,353	645,664
Transition Dark Gray and Dark Gray Wooded	825,380	1,775,106	988,746	166,361	1,049,804	176,112	46,500	19,104	5,047,173	3,119,134
Gray Wooded	21,312	268,822	1,683,342	274,173	1,412,466	234,897	23,008	16,606	3,934,626	965,377
Azonal	20,480	138,539	568,210	370,090	2,632,649	3,080,601	191,038	726,622	7,728,220	1,212,214
Total agricultural land area	2,578,221	13,133,178	21,474,601	8,130,968	17,227,439	6,188,850	491,598*	777,614	70,002,469	40,523,014

* Comprised predominantly of large sloughs, small lakes and railroad rights-of-way.

Source: J. A. Shields, H. P. W. Rostad, and J. S. Clayton, *Inventory of Saskatchewan Soils and Thier Capability for Agricultural Use*, Publication No. M13 (Saskatoon: Saskatchewan Institute of Pedology, January 1970), p. 7.

Table 2-5

Percentage of arable, marginal, non-arable and cultivated land within the major soil zones and within the total agricultural land area of Saskatchewan

Soil zone	Classes 1-3 (arable)	Class 4 (marginal)	Classes 5 & 6 (pasture)	Total acres cultivated (per cent)	Per cent of total agricultural land area	Total acreage
Brown	40.1	24.3	35.2	62.2	22.2	15,505,155
Dark Brown	65.6	13.0	21.1	74.2	25.8	18,030,724
Black	63.4	7.0	29.1	60.9	21.4	14,959,577
Thick Black	69.7	3.1	26.7	67.8	5.2	3,608,639
Dark Gray	72.0	3.6	22.6	54.5	1.7	1,188,353
Transition	71.0	3.3	24.3	62.8	7.2	5,047,173
Gray Wooded	49.0	7.0	42.0	24.6	5.6	3,934,628
Azonal	9.4	4.8	73.9	15.7	11.0	7,728,220
Total agricultural land area	53.1	11.6	33.5	57.9		70,002,469

Source: J. A. Shields, H. P. W. Rostad, and J. S. Clayton, *Inventory of Saskatchewan Soils and Their Capability for Agricultural Use*, Publication No. M13 (Saskatoon: Saskatchewan Institute of Pedology, January 1970), p. 9.

5. Summary

The soils of Saskatchewan constitute a renewable resource and 40 per cent of the arable land in Canada. Therefore, it is important that they are protected against erosion, pollution from all sources, depletion of fertility and spoilage by deforestation. They must be managed and used wisely.

C. Vegetation[3]

1. Natural vegetation types

The types of natural vegetation found in Saskatchewan are determined by the climate, the topography and the soil factors. The province lies within two of the major vegetation zones of North America; a grassland zone has developed in the semi-arid climate of the southwest, and Boreal Forest occupies the sub-humid conditions of the north.

Gradual changes in climatic gradient and latitude are reflected in the sub-division of the two zones. In addition, altitude-related vegetation zones occur on uplands such as the Cypress Hills and the Porcupine Hills. Figure 1-6 shows the vegetation subzones of Saskatchewan.

The Short-grass Prairie zone southwest of the Missouri Coteau has been maintained by the interplay of climate, fire and grazing. This area blends in the northeast into the moister region of the Mixed Prairie grasslands, which in turn blends into the Aspen Grove parkland. This parkland area, which embodies a transition from grassland to Boreal Forest, is dominated by deciduous trees (especially poplars) and a variety of tall shrubs, forbs and grasses which grow on its gray-black soils.

Northeast of the Aspen Grove parkland the southern Boreal Forest zone occurs. Its northern limits are along the southern edge of the Precambrian Shield. This zone is a source of spruce, pine and poplar, which grow in its Gray Wooded (Podzolic) soils.

The Northern Coniferous forest zone, located on the Precambrian Shield, is characterized by closed-crown stands of spruce and pine wherever the granite bedrock is mantled with soil. This zone is a complex area of lakes, rivers, bogs, forest patches and rock outcrops.

The final vegetative zone is the Sub-Arctic Lichen Woodland in the far northeastern part of Saskatchewan. It is an open coniferous forest with a predominant ground cover of gray and yellow lichen.

Saskatchewan is the only province in which the zonal relationship among climate, soils and the distribution of native species are so clearly displayed, from the grasslands in the warm, dry southwest to the lichen-woodland in the cold, dry northeast.

2. Forest capability

More than one-half of the total area of Saskatchewan, or 352,000 km^2, is provincial forest (Figure 2-8). In the past few years there has been an increased interest in the resources of this area. However, not all of this northern forest land can be classified as commercial forest (accessible to the user and capable of sustaining tree growth in perpetuity). North of the commercial forest is an area of 197,000 km^2 which has been

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[3] The material for this section was derived primarily from:

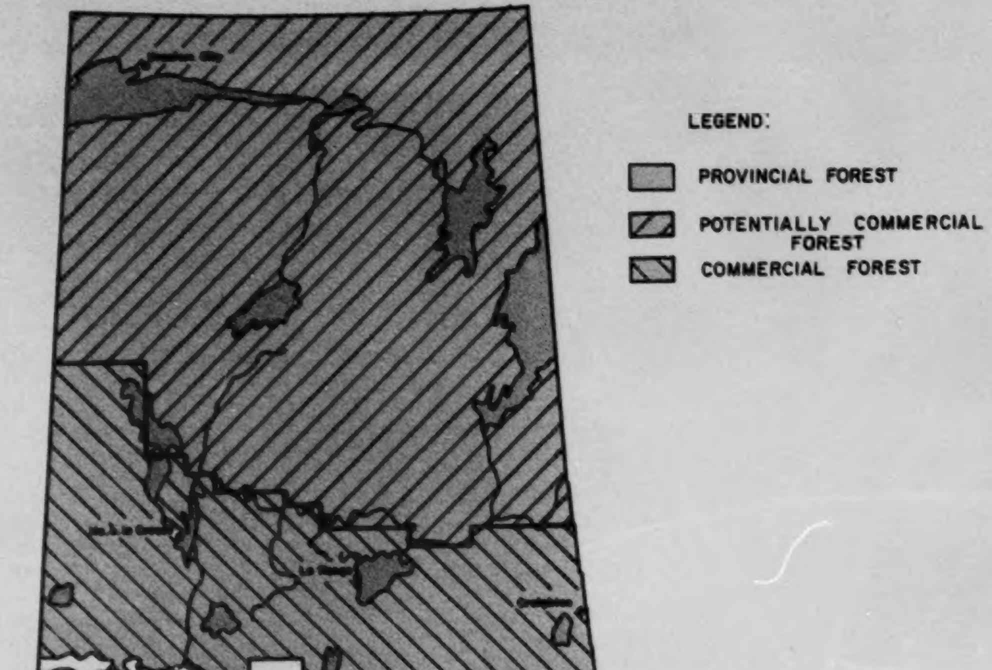
A. Kabzems and J. P. Senyk, "A Comparison of Actual and Potential Forest Land Production in Saskatchewan" *Forestry Chronicle*, 43, 1967, pp. 257-264.

A. Kabzems, et al., *Land Capability and Classification for Forestry in Saskatchewan*, Technical Bulletin No. 6 (Saskatchewan Department of Natural Resources: Forestry Branch, March 1972).

J. Howard Richards and K. I. Fung, *Atlas of Saskatchewan* (Saskatoon: University of Saskatchewan, 1969), pp. 73-78.

Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976.

Saskatchewan Department of Tourism and Renewable Resources, *Saskatchewan's Forest Resources*, March, 1977.


LEGEND:
PROVINCIAL FOREST
POTENTIALLY COMMERCIAL FOREST
COMMERCIAL FOREST
SASKATOON
Yorkton
REGINA
Swift Current
Moose Jaw

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LAND USE IN SASKATCHEWAN
PROVINCIAL FORESTS
IN
SASKATCHEWAN

FIGURE
2 - 8

classified as potential commercial forest. In time, through the use of refined management techniques and silvicultural practices, the severe climate and poor soil limitations of this area may be overcome and certain parts of the area may produce forest stands capable of supporting viable timber operations.

Table 2-6

Land capability for forestry

Land capability class	Limitation	Land ('000's) of acres	Land per cent
1	no important limitations	0	0
2	slight limitations	38	.1
3	moderate limitations	609	1.8
4	moderately severe limitations	5,534	16.5
5	severe limitations	12,968	38.7
6	very severe limitations	6,935	20.7
7	severe limitations that preclude growth	7,413	22.2
Total	— land	33,496	100.0
	— water	2,603	
Grand total		36,098	

Source: A. Kabzems, et. al., *Land Capability and Classification for Forestry in Saskatchewan*, Technical Bulletin No. 6 (Saskatchewan Department of Natural Resources, Forestry Branch, March 1972), p. 41.

Not all of Saskatchewan's commercial forest is used for timber production. A significant portion of the area is classified as non-productive forest land, which includes swamp land (treed and clear), treed rock, brush land and permanent water bodies (which take up 21,780 km^2 of the commercial forest). Timber production is also limited by the designation of parts of the forest area for other purposes such as national and provincial parks, protected areas and Indian reserves.

In Saskatchewan, the Canada Land Inventory was responsible for the classification of land according to its capability to produce forests. The area covered was 146,080 km^2 (approximately 36.1 million acres) in the central part of the province and along its eastern edge. The Cypress and Weyburn topographical map sheets, which cover an additional 32,225 km^2, were also inventoried by a simple reconnaissance survey (Figure 2-9). The results of these surveys are shown in Table 2-6.

The potential of the forest land classified in Saskatchewan is calculated to be 2.3 to 2.7 times the actual present production. In other words, in terms of forest productivity, the exisiting forest is using about twice the land area actually necessary to produce the same volume of wood as it does at present.

Of the productive forest, more than 8,500 km^2 are not forested at the present time. The greatest part of this area consists of burned-over timberland, brush or grassland. Cutover land, young plantations, reforestation projects and seeded areas not currently producing timber are also included in this designation.

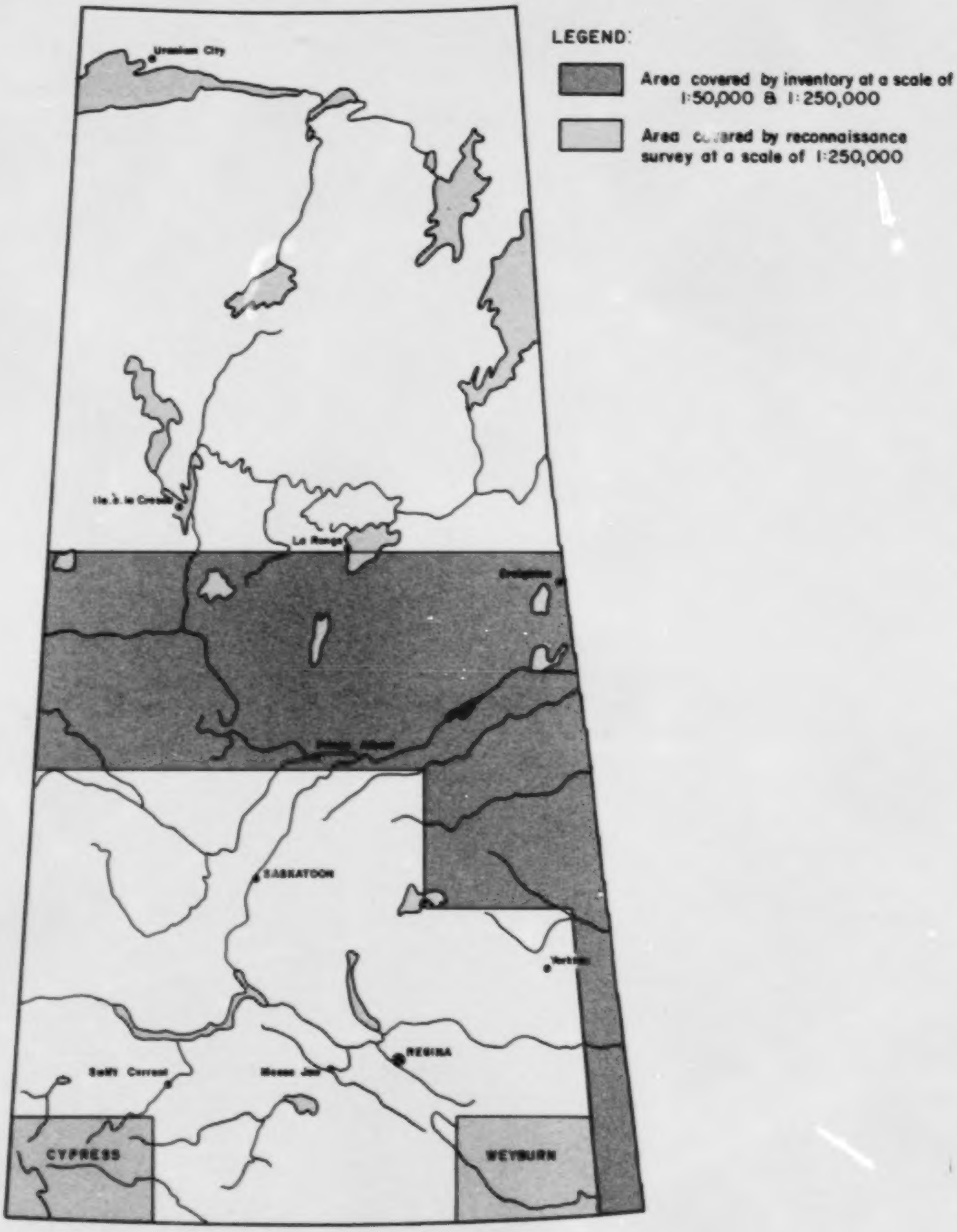
All harvesting activities and other forms of forest utilization are concentrated in the more productive and accessible portion of the provincial forest, which is designated as the Commercial Forest. This zone covers 151,200 km^2 (37.6 million acres). It extends across the province in a diagonal belt averaging about 320 km in width, from south of the Precambrian Shield to the parklands in the southeast. A breakdown of the areas occupied by productive forest, non-productive forest and water is shown in Table 2-7.

Table 2-7

Land classification in provincial forests

	Accessible provincial forests			Potentially accessible provincial forests			Total	
Class of land	Acres	Square kilo-metres	Per cent	Acres	Square kilo-metres	Per cent	Acres	Square kilo-metres
Total area	38,261,794	154,840	100.00	48,696,196	197,068	100.00	86,957,990	351,908
Productive	20,360,750	82,398	53.21	8,237,220	33,336	16.91	28,597,970	115,732
— forested	18,701,746	75,684	48.88					
— non forested	1,659,004	6,713	4.33					
Non-Productive	12,519,345	50,663	32.72	30,186,909	122,163	61.99	42,706,254	172,828
— forested	9,152,108	37,037	23.92					
— non-forested	3,367,237	13,626	8.80					
Water	5,381,699	21,779	14.07	10,272,067	41,570	21.10	15,653,766	63,349

Source: A. Kabzems, et. al., *Land Capability and Classification for Forestry in Saskatchewan*, Technical Bulletin No. 6 (Saskatchewan Department of Natural Resources, Forestry Branch, March 1972), p. 23.


LEGEND:
▨ Area covered by inventory at a scale of 1:50,000 & 1:250,000
☐ Area covered by reconnaissance survey at a scale of 1:250,000
Uranium City
Ile-à-la Crosse
La Ronge
Creighton
Prince Albert
SASKATOON
Yorkton
REGINA
Swift Current
Moose Jaw
CYPRESS
WEYBURN

SOURCE: A.Kabzems et al., Land Capability and Classification for Forestry in Saskatchewan, Technical Bulletin No. 6 (Saskatchewan Department of Natural Resources, Forestry Branch, March 1972), p.7.

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LAND USE IN SASKATCHEWAN
AREA CLASSIFIED
BY
CANADA LAND INVENTORY
FOR
FOREST CAPABILITY

FIGURE
2-9

Table 2-8

Wood volume by species in commercial forest (in thousands of cubic metres)

Species	Diameter group			Total 10 cm +	Per cent
	10-18 cm	20-24 cm	26 cm +		
White Spruce	19,745	13,490	37,230	70,465	14.54
Black Spruce	75,068	13,665	4,799	93,532	19.30
Jack Pine	71,233	21,081	18,100	110,414	22.79
Balsam Fir	2,420	1.095	1,694	5,209	1.07
Tamarack	2,715	812	589	4,116	0.85
Lodgepole Pine	266	41	141	448	0.09
Total Softwoods	171,447	50,184	62,553	284,184	58.64
White Poplar	67,241	33,380	53,843	154,464	31.88
Black Poplar	7,960	6,133	17,420	31,513	6.50
White Birch	7,191	2,473	3,393	13,057	2.70
Green Ash	51	24	21	96	0.02
Manitoba Maple	438	168	147	753	0.16
White Elm	60	77	371	508	0.10
Total Hardwoods	82,941	42,255	75,195	200,391	41.36
Grand total	254,368	92,439	137,748	484,575	100.00

Source: Saskatchewan Tourism and Renewable Resources, Forestry Branch, November, 1977.

Table 2-8 gives the volume by species for the accessible and potentially accessible forests.

3. Introduced tree species

The use of non-native or introduced tree species varies from single, ornamental landscape plantings at individual homes to functional shelterbelt plantings around farm yards to large acreages of plantations such as those found at most provincial parks and recreation areas. In addition to their aesthetic value and use as windbreaks, non-native tree species are also used for food and shelter for wildlife.

Listed below are some of the more commonly known non-native species found in Saskatchewan and some factors regarding their use:

Non-native but established in Saskatchewan 20 years or more:

Caragana: durable shelter; wildlife.
Manchurian elm: quick growth.
Lilac: durable shelter; wildlife food.
Honeysuckle: quick growth; wildlife food.
Scots Pine: long life; evergreen.
Colorado Spruce: long life; evergreen.

Non-native but released by PFRA for use in last 15 years:

Russian Olive: colorful; wildlife.
Siberian Pear: wildlife food.
Amur Maple: colorful; wildlife food.
Rosybloom Crabapple: colorful; wildlife food.
Nanking Cherry: colorful; wildlife food.
Apricot-Cherry Crosses: wildlife food.
Red Elder: colorful; wildlife food.
Sea Buckthorn: wildlife food.

The species listed have been planted along with native species at many of Saskatchewan's recreation areas. At the Lake Diefenbaker recreation area, for example, approximately 2,000 acres of trees have been planted on land ranging from dry cropland to areas of almost pure gravel.

4. Grassland productivity

Grassland productivity is greatly influenced by the use to which it has been put. Stands in good condition in the Shortgrass Prairie may produce an average of 150 kg of dry matter per acre, of which not more than half should be used. However, this yield may vary from less that 45 kg in very dry years to 270 kg in the most favourable seasons. By contrast, a comparably good stand in the black soil zone would yield an average of 430 kg per acre, or almost three times as much.

5. Exotic forage crops in Saskatchewan

Cultivated (exotic) forage crops were introduced into Saskatchewan after the province became fulfy settled. The earliest settlers were able to utilize native grasses for both pasture and hay, but as larger portions of the home farm were brought under cultivation and more of the land was settled most of the native grass was used for pasture, and hay supplies became scarce. The practice of using straw as the primary source of roughage became common.

Some enterprising farmers attempted to grow tame forage crops with which they were familiar, but unfortunately many of the species tried were very poorly adapted to the Saskatchewan climate and produced poor yields.

The size of the cattle herds eventually increased to the point at which native pasture plus crop residues no longer supplied the roughage needed. Today, the use of exotic species is recognized as a necessary adjunct to a successful livestock industry. There are many improved strains of well-known forage crops and new species are continually being introduced, so that specific varieties are available for use in the many different soil and climatic situations found in the province.

D. Fish and wildlife[4]

1. General

Fish and wildlife, both of which are renewable resources, formed the basis of Saskatchewan's early economic history. These resources remain important today, as they provide food (particularly for northern people), income (through commercial fishing and trapping), hunting and other recreational activities, and enhance the quality of our environment.

2. Fish

There are fish throughout Saskatchewan (Figure 2-10), but they are most abundant in the north, where water occupies nearly 30 per cent of the area.

Saskatchewan's fish fauna consists of 66 species. Most of these are small in size, ranging from 5 cm to 15 cm in length, and are commonly referred to as "minnows" by Saskatchewan residents. Seven species — lake trout, whitefish, walleye, northern pike, tullibee, sturgeon and goldeye — are considered to be commercial species. Several of the commercial species are also considered to be sport fish. Sport fish in Saskatchewan include northern pike, walleye, lake trout, Arctic grayling, yellow perch, whitefish, goldeye, sauger and sturgeon, as well as introduced species such as rainbow, brook and brown trouts, splake, and coho and kokanee salmon. Another introduced species is the carp, which is considered to be less desirable because of its feeding habits. Despite efforts at prevention, it has penetrated deeply along the Qu'Appelle, Assiniboine, Red Deer and Saskatchewan Rivers.

3. Mammals

The number of species of mammals in an area is determined by its faunal history, climate and availability of habitats.

Seventy-eight species of wild mammals occur or have occurred in Saskatchewan. They include 19 families in six orders and range in size from the pygmy shrew, which averages 8.9 cm in total length and 2.8 grams in weight, to the bison, which may be 3.6 m in length and 850 to 910 kg in weight. Rodents are the most abundant order (30 species), and the carnivores are the next most abundant (22 species). There are eight species of bats, seven species of even-toed ungulates, six species of shrews and four species of hares and rabbits. The Norway rat and the house mouse are introduced commensals of man.

In Saskatchewan the following mammals are considered to be game animals: white-tailed deer, mule deer, moose, antelope, elk, woodland caribou and bear. The following animals are trapped for fur: badger, bear, beaver, fisher, silver fox, cross fox, red fox, white fox, lynx, marten, mink, muskrat, otter, jack rabbit, bush rabbit, raccoon, skunk, squirrel, weasel, bobcat, coyote, timber wolf and wolverine.

Twenty-five of Saskatchewan's mammals have geographic ranges which are confined to the Boreal Forest region. The ranges of 18 species extend over both the Boreal Forest and the more southerly "temperate" areas, and 33 of the province's mammals have ranges south of the Boreal Forest. The ranges of selected Saskatchewan mammals are shown in Figure 2-11[5].

The prairie is an effective barrier against the spread of mammal species across the continent south of the Boreal Forest as well as a distinct habitat to which a number of mammals have adapted. Fifteen of the province's mammal species are restricted to the arid and semi-arid plains of the continental interior.

Only a few of Saskatchewan's mammals demonstrate migratory behavior. These include large ungulates such as the bison, barren-ground caribou and antelope.

4. Birds

Of the 415 species of birds breeding in Canada, 242 have been reported to breed in Saskatchewan. Probably the most common birds nesting in the province are Brewer's and red-winged blackbirds, brown-headed cowbirds, horned larks, western meadowlarks and vesper, clay-coloured, savannah and house sparrows. Saskatchewan is best known, however, for three groups of birds: shorebirds, (willets, marbled godwits, killdeer and 13 other breeding species), hawks (mainly Swainson's, marsh and red-tailed) and waterfowl. Mallards and pintails are the province's most common breeding ducks, followed by blue-winged teal, shovelers, lesser scaup and American widgeon (baldpates). During the mid-1950's more mallards, pintails, canvasbacks, and redheads nested in the southern 284,900 km^2 of the province than in any other area of equal size in North America. American coots and black terns are also conspicuous birds in the sloughs and marshes. Some species, such as the house sparrow, European starling, ring-necked pheasant, and gray partridge, have been introduced by man.

All species fluctuate in numbers in any given area from year to year, but some population changes are more evident and more easily explained than others. The number of ducks breeding in southern Saskatchewan dropped significantly from the mid-1950's to the early 1960's because drought reduced the number of water areas from 4,200,000 in May of 1954, to 600,000 in May of 1961. A more dramatic fluctuation occurred at Lake of the Narrows, where 15,000 Franklin's gulls nested in 1905 and none nested in 1906 because it was dry. Some resident game birds, such as ruffed grouse, experience cyclic population fluctuations due to changes in production and survival rates.

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[4] The material for this section was derived primarily from:

H. W. Beck, *A Guide to Saskatchewan Mammals*, Special Publication No. 1 (Regina: Saskatchewan Natural History Society, 1958).

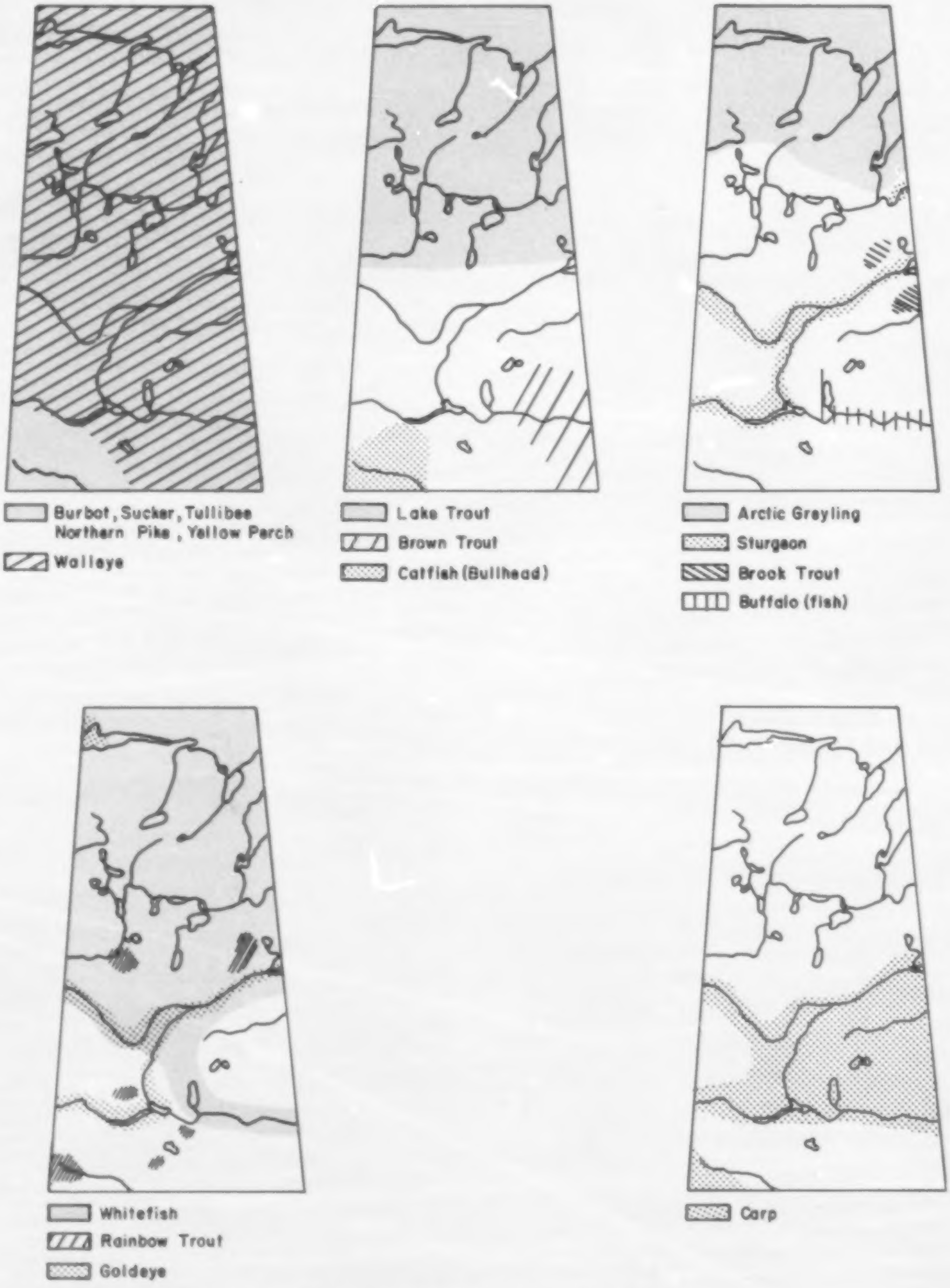
H. W. Mitchell, "Birds of Saskatchewan", *Canadian Field Naturalist*, 38 (May, 1924), pp. 101-120.

D. S. Rawson, "A Check List of the Fishes of Saskatchewan", *Report of the Royal Commission on the Fisheries of Saskatchewan*, Regina, 1947, pp. 1-8.

J. Howard Richards, and K. I. Fung, *Atlas of Saskatchewan* (Saskatoon: University of Saskatchewan, 1969), pp. 79-90.

J. Dewey Soper, *The Mammals of Alberta* (Edmonton: The Hamly Press Ltd., 1964).

[5] It should be noted these mammal ranges were obtained from the *Atlas of Saskatchewan*. Other information sources indicate different ranges in some cases. The range maps should therefore be used with caution.


▒ Burbot, Sucker, Tullibee Northern Pike, Yellow Perch
▨ Walleye
▒ Lake Trout
▨ Brown Trout
░ Catfish (Bullhead)
▒ Arctic Greyling
░ Sturgeon
▧ Brook Trout
▥ Buffalo (fish)
▒ Whitefish
▨ Rainbow Trout
░ Goldeye
░ Carp

SOURCE: J.H. Richards and K.I. Fung, Atlas of Saskatchewan (Saskatoon: University of Saskatchewan, 1969), p. 83.

SASKATCHEWAN

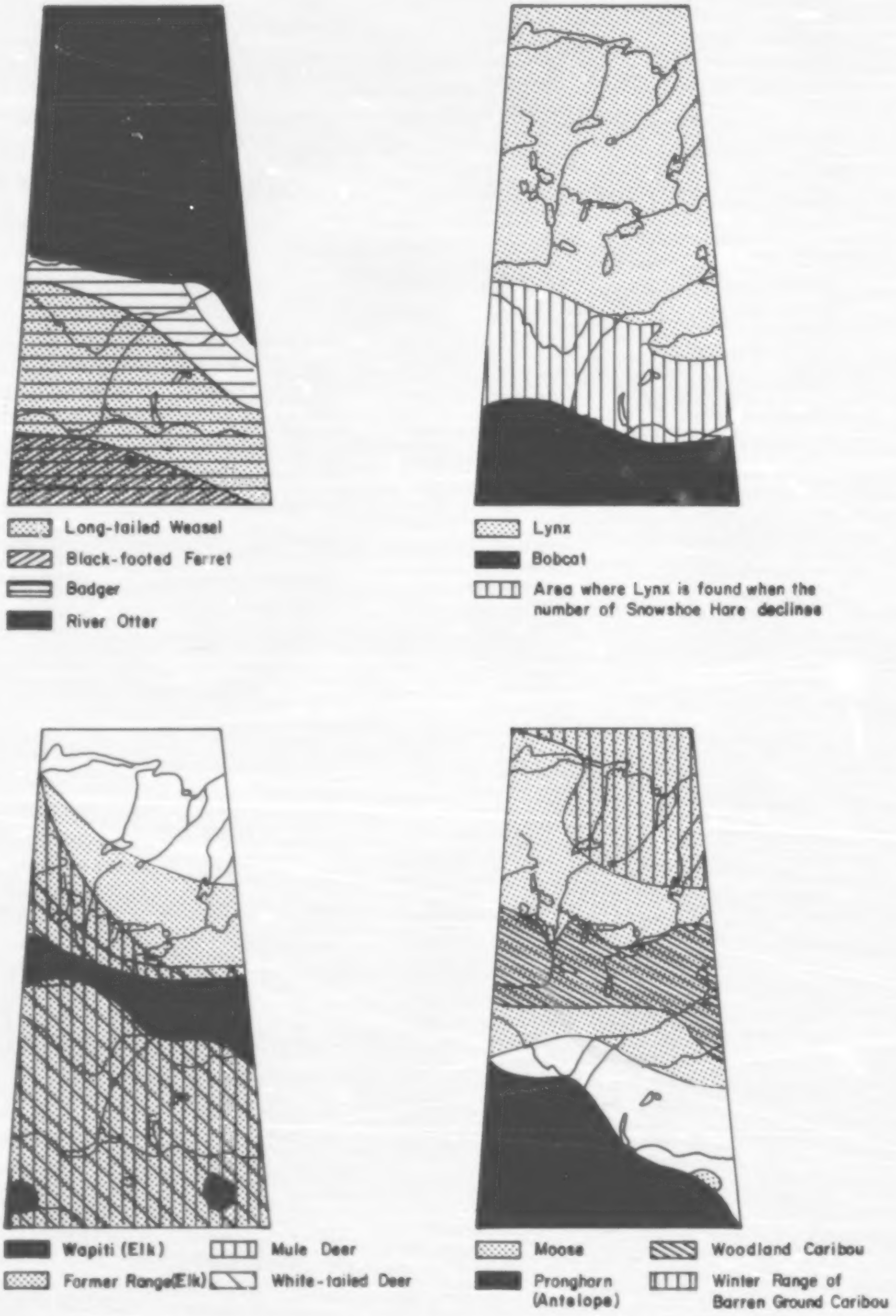
DEPARTMENT OF THE ENVIRONMENT

POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN

SELECTED SPECIES OF FISH
AND
THEIR RANGES
IN
SASKATCHEWAN

FIGURE
2-10


Long-tailed Weasel
Black-footed Ferret
Badger
River Otter
Lynx
Bobcat
Area where Lynx is found when the number of Snowshoe Hare declines
Wapiti (Elk)
Former Range(Elk)
Mule Deer
White-tailed Deer
Moose
Pronghorn (Antelope)
Woodland Caribou
Winter Range of Barren Ground Caribou

SOURCE: J.H. Richards and K.J. Fung, Atlas of Saskatchewan (Saskatoon: University of Saskatchewan, 1969), p.81.

SASKATCHEWAN
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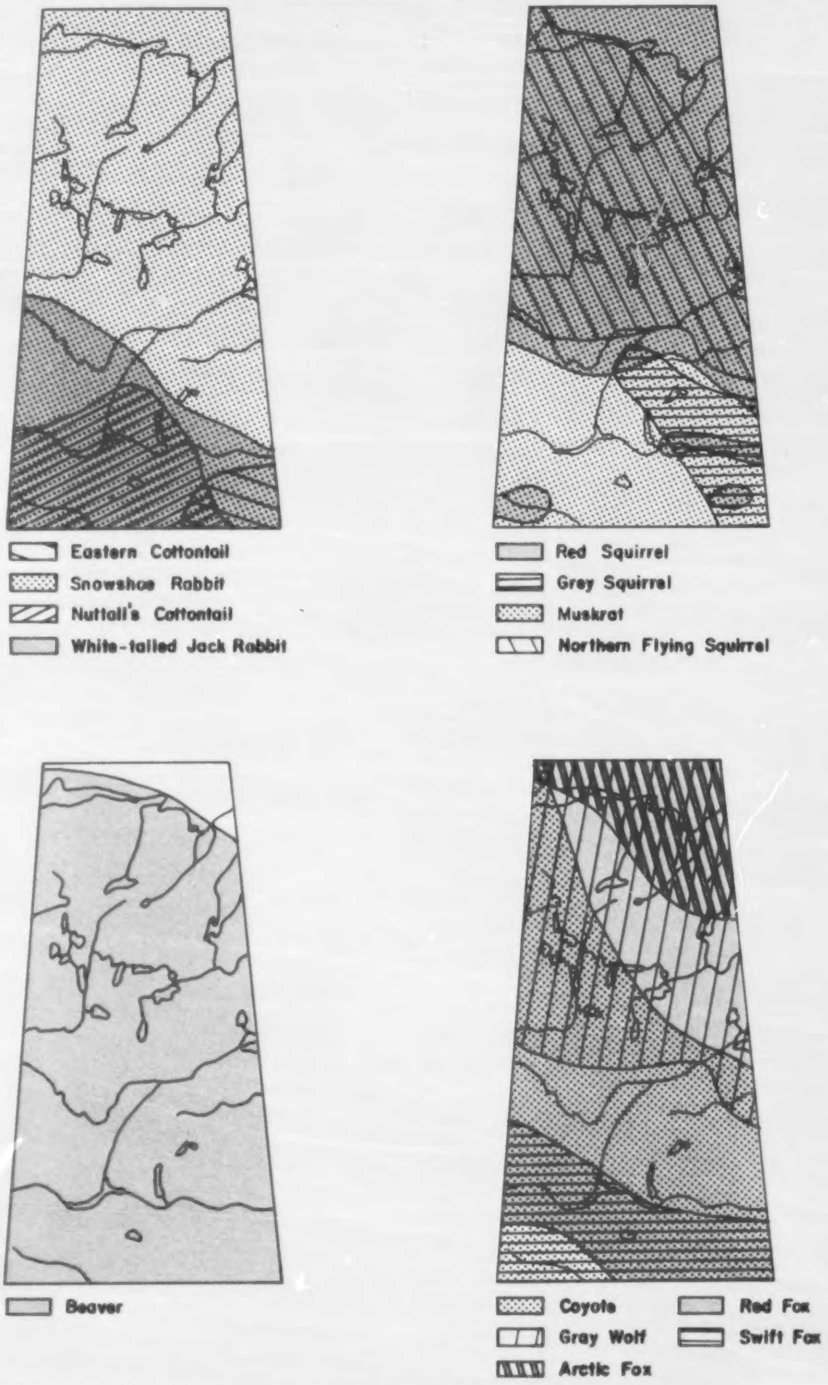
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
SELECTED MAMMAL RANGES
OF
SASKATCHEWAN

FIGURE
2-11
A



▭ Eastern Cottontail
▒ Snowshoe Rabbit
▨ Nuttall's Cottontail
▒ White-tailed Jack Rabbit
▒ Red Squirrel
▤ Grey Squirrel
▒ Muskrat
▨ Northern Flying Squirrel
▒ Beaver
▒ Coyote
▥ Gray Wolf
▥ Arctic Fox
▒ Red Fox
▤ Swift Fox

SOURCE: J.H. Richards and K.J. Fung, Atlas of Saskatchewan (Saskatoon: University of Saskatchewan, 1969), p. 80-81.

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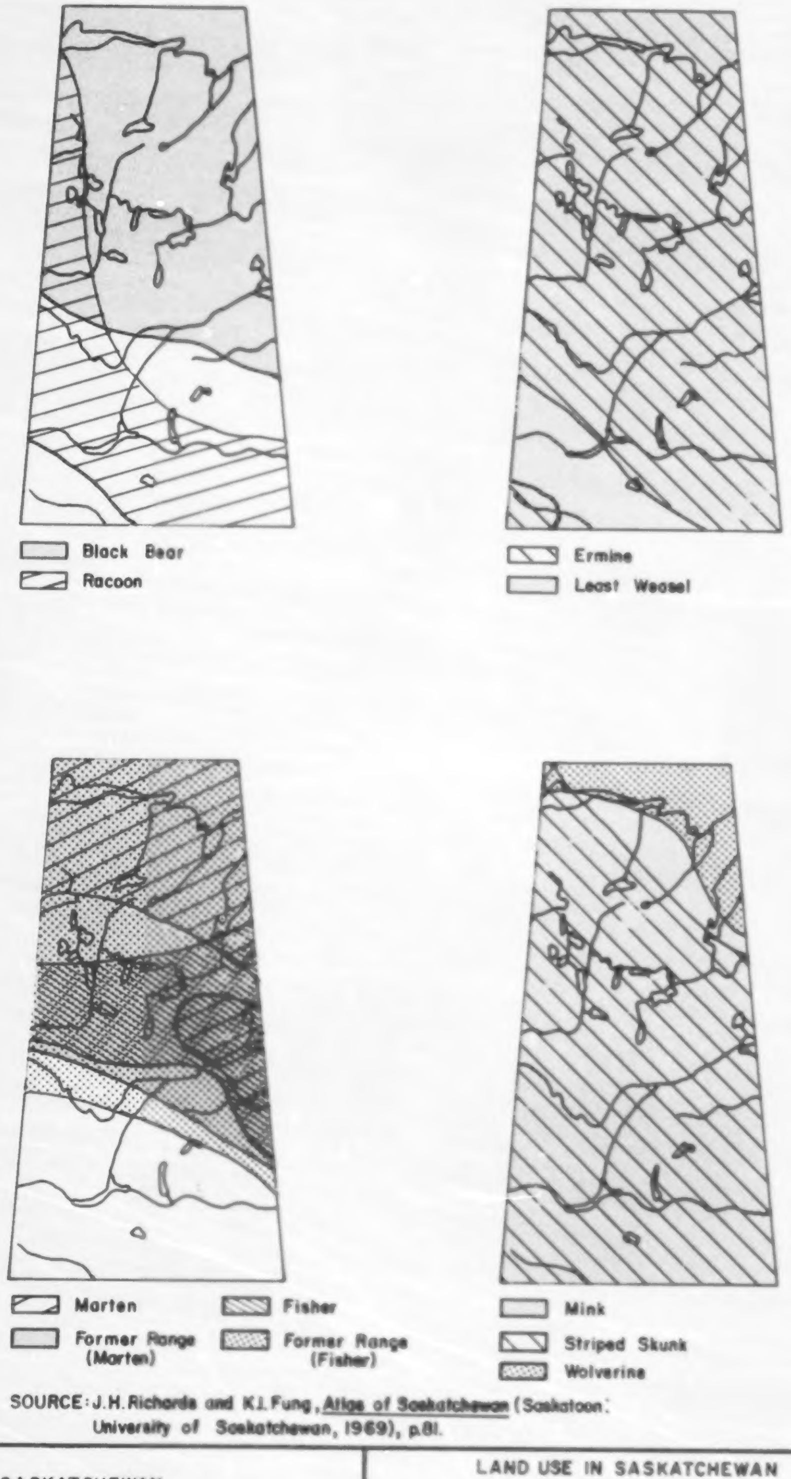
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
SELECTED MAMMAL RANGES
OF
SASKATCHEWAN

FIGURE
2-11
B


Black Bear
Racoon
Ermine
Least Weasel
Marten
Fisher
Former Range (Marten)
Former Range (Fisher)
Mink
Striped Skunk
Wolverine

SOURCE: J.H. Richards and K.I. Fung, Atlas of Saskatchewan (Saskatoon: University of Saskatchewan, 1969), p.81.

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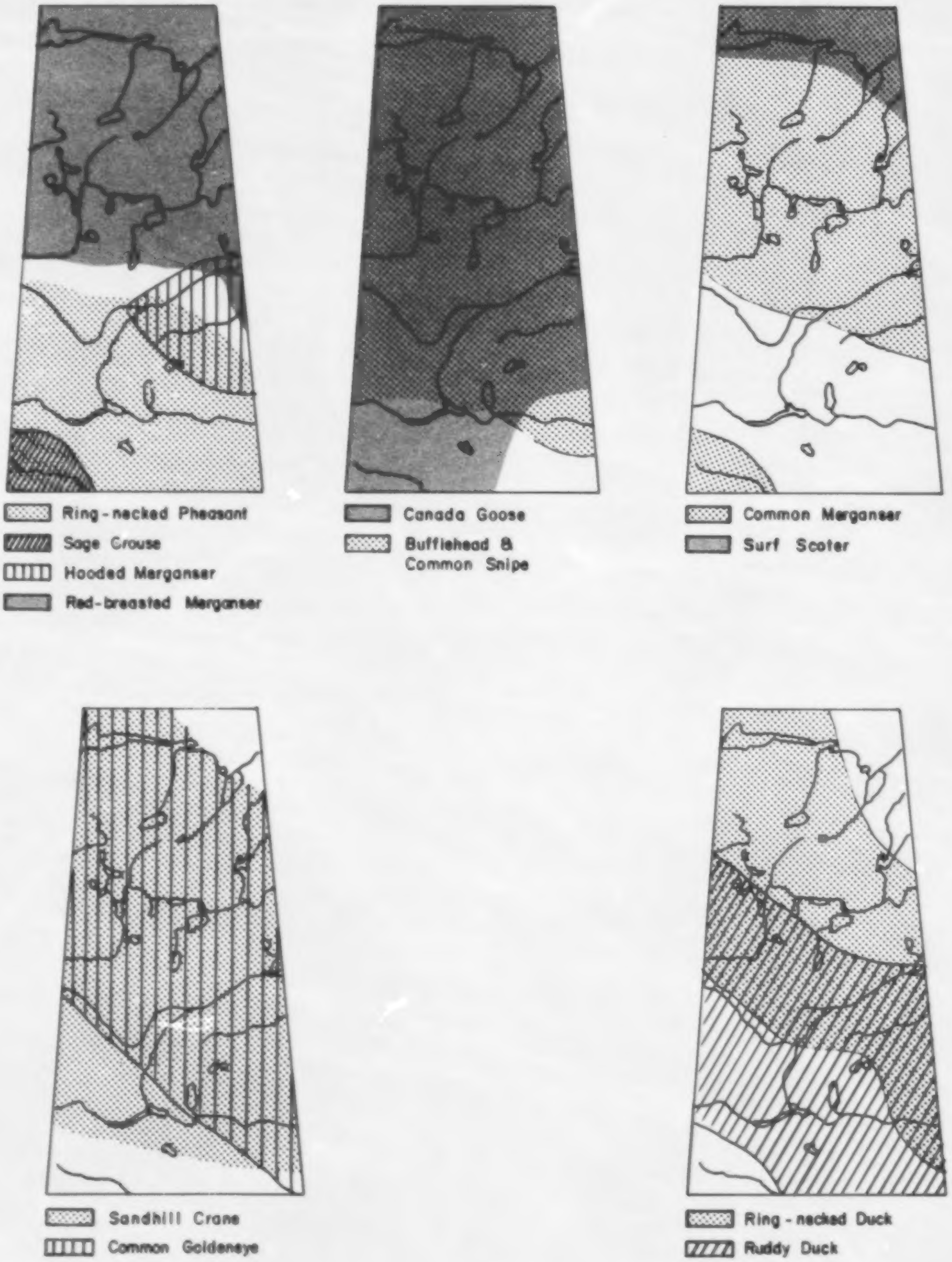
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
SELECTED MAMMAL RANGES
OF
SASKATCHEWAN

FIGURE
2-11
C

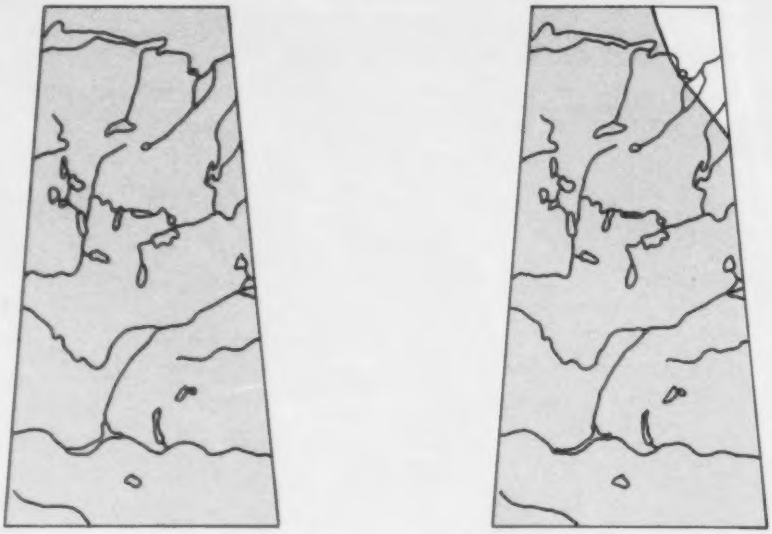

Ring-necked Pheasant
Sage Grouse
Hooded Merganser
Red-breasted Merganser
Canada Goose
Bufflehead & Common Snipe
Common Merganser
Surf Scoter
Sandhill Crane
Common Goldeneye
Ring-necked Duck
Ruddy Duck

SOURCE: J.H. Richards and K.I. Fung, Atlas of Saskatchewan (Saskatoon: University of Saskatchewan, 1969), pp85-87.

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING, AND RESEARCH BRANCH

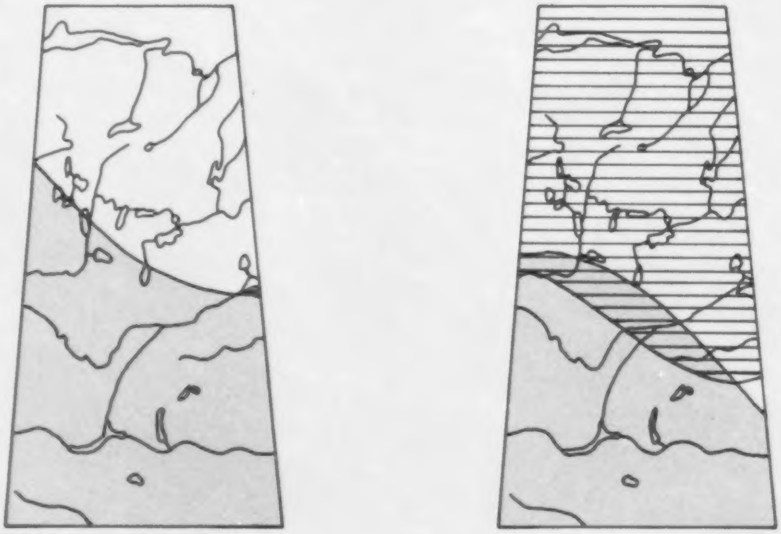
LAND USE IN SASKATCHEWAN
RANGES OF GAME BIRDS THAT BREED IN SASKATCHEWAN

FIGURE 2-12 A



▒ Mallard, Pintail, Lesser Scaup, White-winged Scoter, Green-Winged Teal, American Widgeon (Baldplate)

▒ American Coot, Gadwall, Ruffed Grouse, Sharp-tailed Grouse Shoveler, Blue-winged Teal.



▒ Canvasback, Redhead

▒ Gray (Hungarian) Partridge

▤ Spruce Grouse

SOURCE: J.H. Richards and K.I. Fung, Atlas of Saskatchewan (Saskatoon: University of Saskatchewan, 1969), pp. 85-87.

SASKATCHEWAN
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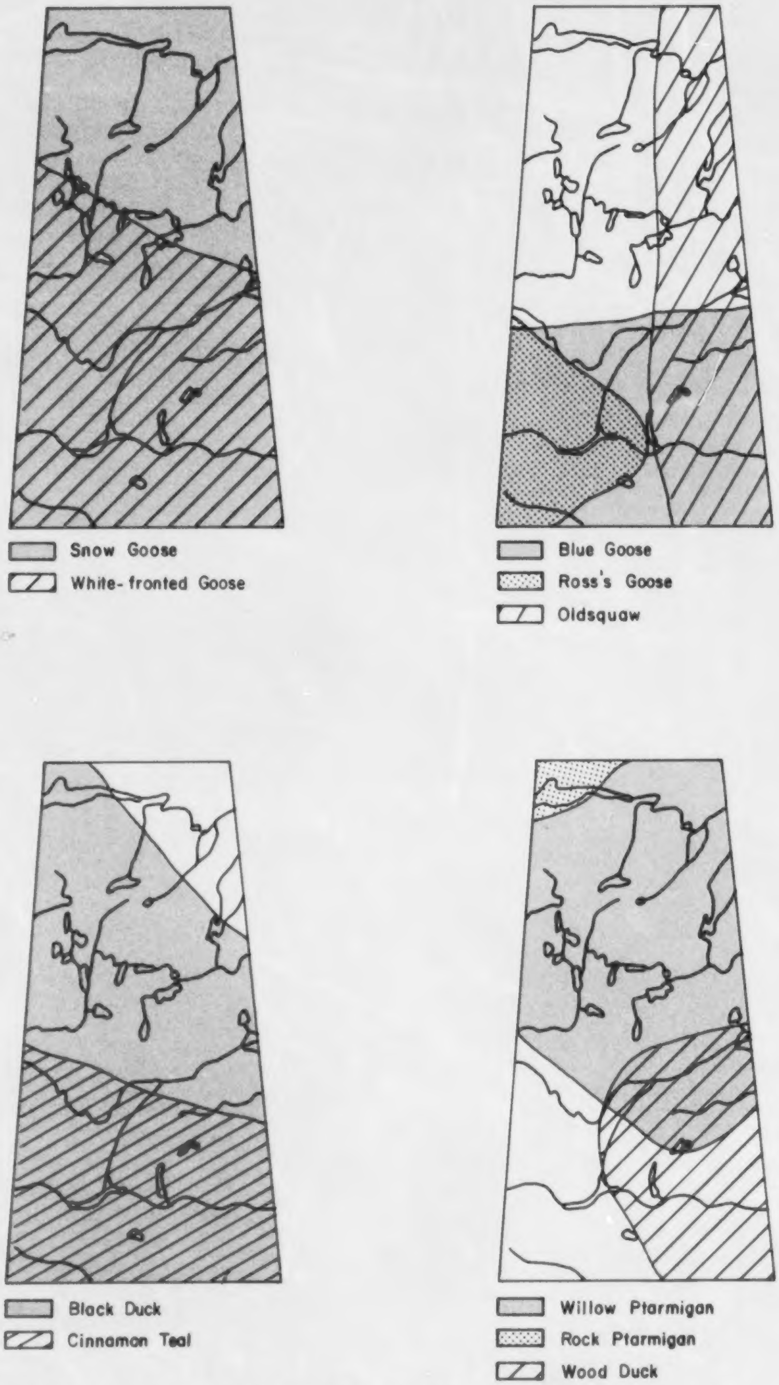
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
RANGES OF GAME BIRDS THAT BREED
SASKATCHEWAN

FIGURE
2-12
B


Snow Goose
White-fronted Goose
Blue Goose
Ross's Goose
Oldsquaw
Black Duck
Cinnamon Teal
Willow Ptarmigan
Rock Ptarmigan
Wood Duck

SOURCE: J.H. Richards and K.J. Fung, Atlas of Saskatchewan (Saskatoon: University of Saskatchewan, 1969), p.88.

SASKATCHEWAN **DEPARTMENT OF THE ENVIRONMENT** POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN **RANGES OF GAME BIRDS THAT DO NOT BREED IN SASKATCHEWAN**	FIGURE 2-13

Table 2-9

Estimate of waterfowl breeding populations in southern Saskatchewan

Waterfowl	Population estimates in thousands						
	1972	1973	1974	1975	1976	1977	1978
Mallard	2,603.4	2,353.0	2,170.8	2,438.0	3,043.9	2,866.8	1,869.1
Pintail	2,261.5	1,006.3	2,179.7	2,454.5	2,556.0	672.5	891.1
Others	4,910.2	4,928.7	4,858.0	5,321.1	5,429.9	4,691.8	4,058.0
Total	9,775.3	8,287.9	9,208.5	10,213.6	11,029.7	8,231.5	6,818.8

Source: U.S. Fish and Wildlife, *Breeding Pair Report for Southern Saskatchewan*, 1977-78, Table No. 1.

Most Saskatchewan birds migrate south for the winter. During fall and spring migrations, a spectacular quantity and variety of birds can be observed. Concentrations of Canada, snow, white-fronted and Ross's geese sometimes exceed 25,000 per species in the Kindersley-Kerrobert area in the fall. Cranes, ducks, geese and swans also gather in impressive numbers around the north end of Last Mountain Lake.

Figure 2-12 shows the range of game birds that breed in Saskatchewan and Figure 2-13 shows the range of game birds that do not breed in Saskatchewan*. The latter fall into the main categories of ducks, geese, upland game birds and sandhill cranes.

5. Wildlife capabilities

The Canada Land Inventory Program mapped wildlife capability for ungulates and waterfowl. Information regarding the actual acreages of land classified for wildlife capability is very limited, however. In the land capability work completed for the Qu'Appelle Basin Study, it was calculated that the Qu'Appelle Valley and the adjacent area contains over 13,500 acres of Class 1 ungulate habitat and over 38,000 acres of Class 1 waterfowl habitat.

A general overview of the Canada Land Inventory Land Capability for Ungulates map for southern Saskatchewan indicates that the greatest percentage of the province falls into Class 4 and 5 (moderate limitations), followed by Class 3 (slight limitations), Class 2 (high capability), Class 6 and 7 (severe limitations) and finally Class 1 (great importance as wintering areas).

Areas of winter habitat are critical for wildlife in Saskatchewan. The Canada Land Inventory classification system for ungulates takes this into account by designating important wintering areas as Class 1W, Class 2W or Class 3W. These winter habitat areas represent a very small proportion of the total area mapped in Saskatchewan.

Saskatchewan has approximately 310,800 km² of waterfowl-productive area, which is utilized by approximately one-third of the continental breeding population of ducks. Estimated breeding populations of mallards, pintails and other species in southern Saskatchewan for the years 1972-1978 are shown in Table 2-9.

Availability of water is a critical factor in successful waterfowl production. This fact is taken into account in the Canada Land Inventory classification for waterfowl: Classes 1 and 2 have high capability for waterfowl production, but Class 3 lands, although having moderately high capability, may suffer from occassional droughts. Special Classes 1S, 2S and 3S recognize areas that serve as important migration stops as well as being very productive. Special Class 3M indicates areas which are generally not very productive but which serve as important migration stops.

E. Outdoor recreation

1. Outdoor recreation capability

The Canada Land Inventory provides an outdoor recreation classification based on resource capability. The basis of the outdoor recreation classification is the quantity of recreation in terms of users which may be generated or sustained per unit area of land per year under perfect market conditions. The quality of experience and non-intensive recreation pursuits tend to be downgraded by the classification. The classification also assumes uniform demand and accessibility for all areas, so that location in relation to population concentrations and access routes does not affect the classification.

On the outdoor recreation capability maps, land is ranked according to its natural ability to support recreational activities. Sound recreational land management and development practices are assumed for all areas. Water bodies are not directly classified, although their value is incorporated into the classification of the adjoining shoreline.

The recreation capability follows the typical seven-type classification of the Canada Land Inventory. Class 1 lands have a very high capability for outdoor recreation, while Class 7 lands have a very low capability. Class 8 indicates lands which were not classified, such as urban lands.

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[*] It should be noted that these game bird ranges were derived from the *Atlas of Saskatchewan*. Other information sources would indicate different ranges or status in some cases. The range maps should therefore be used with caution.

Table 2-10 shows the class distribution of recreational lands in Saskatchewan south of the fifty-fifth parallel. It sould be noted that 24 and 66 per cent of this area is Class 5 and Class 6 (land with a low capability for outdoor recreation) respectively. Less than one per cent of the area is Class 1 to 3; very little of southern Saskatchewan's land area has a high capability for outdoor recreation. It is obvious that Class 1 to 3 lands should be managed very carefully in order to maximize their capability potential.

Table 2-10

Canada Land Inventory outdoor recreation classification

Capability Class	Acreage	Per cent of CLI area
Class 1	17,971	0.02
Class 2	38,786	0.04
Class 3	598,755	0.65
Class 4	2,878,603	3.15
Class 5	22,345,673	24.44
Class 6	60,148,380	65.79
Class 7	3,827,075	4.19
Class 8	1,566,296	1.71
Total	91,421,539	100

Source: Lands Directorate, Environment Canada.

F. Water[7]

Water is a renewable resource that is essential for the survival of all living things. For the purposes of this report it will be discussed under the sub-headings of surface water and ground water.

1. Surface water

Saskatchewan has an estimated 81,632 km² of surface water, or approximately 12 per cent of the total area of the province. This water is found in streams, rivers, ponds, lakes and man-made reservoirs.

The sources of surface water are several drainage basins which exist in the province (see Figure 1-3). Some small internal drainage areas are located between these drainage basins; the streams found in these areas are generally highly saline.

There are numerous lakes and rivers in Saskatchewan. In an area of 13,711 km² southwest of Reindeer Lake, 7,500 lakes have been counted. Table 2-11 presents the annual average flows for nine of Saskatchewan's rivers.

A network of hydrometric monitoring stations has been set up in Saskatchewan for the purpose of collecting information concerning the amount and distribution of surface water.

The federal government has been involved in hydrometric surveys in Saskatchewan since the early 1900's. The provincial government became involved after the transfer of water resources to the province in 1930. From the 1930's to 1975 the hydrometric network in Saskatchewan was operated on an informal cost-sharing basis, with the federal government carrying out most of the work involved in operating the network.

In February of 1975, a federal-provincial agreement for hydrometric data collection was signed. This agreement, which formalized the cost-sharing arrangements between the federal and provincial governments, requires that all stations in the province be designated as either federal, federal-provincial or provincial, according to interest or jurisdiction.

Table 2-11

Annual average flows for major Saskatchewan rivers

	Mean annual discharge in millions of cubic metres
Fond du Lac River at Stony Rapids	9,448.61
Churchill River at Sandy Bay	21,832.95
North Saskatchewan River at Prince Albert	7,697.04
South Saskatchewan River at Saskatoon	8,622.17
Saskatchewan River below Tobin Lake	15,295.40
Red Deer River near Erwood	693.23
Assiniboine River at Kamsack	180.09
Qu'Appelle River at Tantallon	244.23
Frenchman River at International Boundary	72.89
Wood River near Lafleche	49.59
Souris River near International Boundary (Sherwood, North Dakota)	124.58
Total	64,260.78

Source: Fisheries and Environment Canada, *Historical Streamflow Summary Saskatchewan to 1976*, Inland Waters Directorate, Water Resource Branch (Ottawa: Information Canada, 1977), various pages.

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[7] The material for this section was derived primarily from:

Environment Canada, *Canada Water Year Book 1975* (Ottawa: Information Canada, 1975).

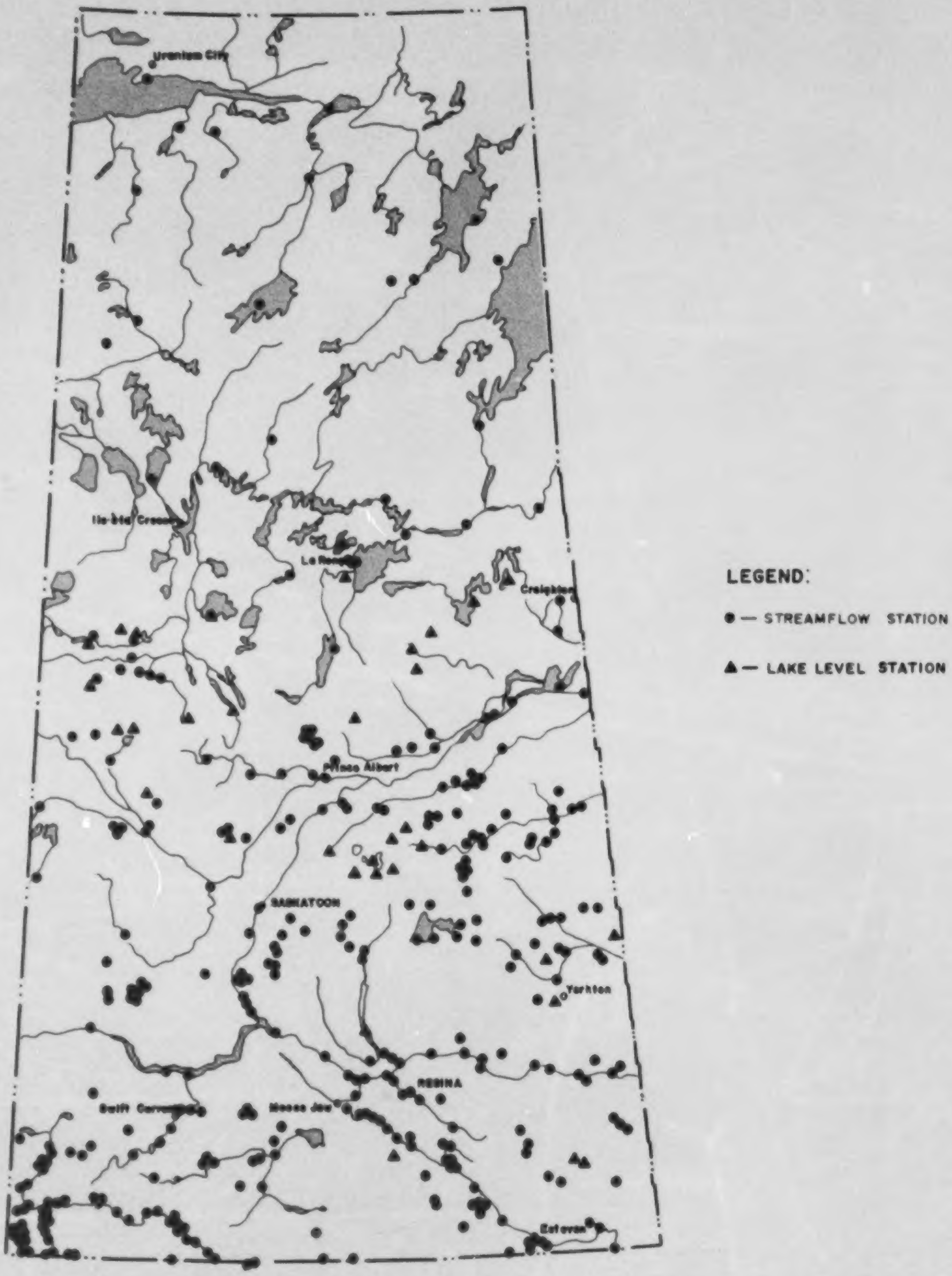
Fisheries and Environment Canada, *Historical Streamflow Summary Saskatchewan to 1976*, Inland Waters Directorate, Water Resource Branch (Ottawa: Information Canada, 1977).

J. Howard Richards and K. I. Fung, *Atlas of Saskatchewan* (Saskatoon: University of Saskatchewan, 1969), pp. 61-68.

Saskatchewan Department of Environment, *Water Quality Objectives*, Water Pollution Control Branch, 1975.

Saskatchewan Water Resources Commission, *Annual Report*, for the Fiscal Year Ended March 31, 1967.

Saskatchewan Water Resources Commission, *Annual Report*, for the Fiscal Year Ended March 31, 1970.


Uranium City
Ile-à-la Crosse
La Ronge
Creighton
Prince Albert
SASKATOON
Yorkton
REGINA
Swift Current
Moose Jaw
Estevan
LEGEND:
● — STREAMFLOW STATION
▲ — LAKE LEVEL STATION

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
HYDROMETRIC NETWORK
IN
SASKATCHEWAN – 1973

FIGURE
2-14

The numbers and types of stations in the province are summarized in Table 2-12. Their locations are shown in Figure 2-14. Table 2-13 shows the distribution of hydrometric stations by major drainage basin.

The Water Survey of Canada operates most of the streamflow stations in the province and most of the lake level stations in the federal and federal-provincial classifications. The provincial Department of the Environment operates almost all of the provincial lake level stations.

Table 2-12

Hydrometric stations in Saskatchewan

Classification	Number of stations		
	Streamflow	Lake level	total
Federal	122	44	166
Federal-Provincial	109	7	116
Provincial	66	77	143
Total	297	128	425

In recent years, emphasis has been placed on establishing hydrometric stations in northern Saskatchewan. There are presently 33 fly-in stations in northern Saskatchewan in the hydrometric program.

In addition to all of the stations discussed above, the province operates about 30 stations for a short period in the spring for streamflow forecasting purposes.

Table 2-13

Saskatchewan hydrometric stations by drainage basin

Basin	Number of stations	
	Streamflow	Lake level
Assiniboine River	15	7
Churchill River	29	14
Cypress Hills	7	5
Kasba River	—	—
Lake Athabasca	8	3
Lake Winnipegosis	16	2
Missouri River	44	6
North Saskatchewan River	25	14
Old Wives Lake	10	6
Qu'Appelle River	58	26
Saskatchewan River	21	14
South Saskatchewan River	35	21
Souris River	28	10
Tazin River	1	—
Total	297	128

2. Surface water quality

A description of water quality in Saskatchewan can be obtained by referring to the major drainage basin systems of the Saskatchewan River, the Mississippi River, the Churchill River and the MacKenzie River. The headwaters of the Saskatchewan River system, which rise in the Rocky Mountains, are medium to hard bicarbonate waters. The North and South Saskatchewan Rivers rapidly increase in mineral content (particularly hardness and sulphate) as they flow eastward, finally reaching total hardnesses exceeding 250 mg/l as calcium carbonate ($CaCO_3$). In spite of the inflow of mineralized alkaline and sulphate waters from the Plains Region, the Saskatchewan River remains relatively constant in quality. It becomes essentially an alkaline-bicarbonate water as it flows across the plains. The North Saskatchewan River is usually lower in non-carbonate hardness than the South Saskatchewan River because of the inflow of softer waters from the Canadian Shield. Many rivers in the Red-Nelson River system arise in the high plains or Manitoba Lowlands and are highly mineralized, and often very turbid. Most waters in this system are poor in quality, requiring heavy treatment (including softening) before use.

The Mississippi River system drains only a small area of southern Saskatchewan. The Milk River, the principal river of this system in Canada, is very hard and turbid. Its Saskatchewan tributaries — Lodge Creek, Battle Creek and the Frenchman River — are alkaline high-sulphate waters similar to those in the nearby closed basins.

The Churchill River receives hard, high-sulphate waters from the northern portion of the Interior Plains Region (via the Beaver and Waterhen Rivers) and very soft bicarbonate waters from the Canadian Shield (via the Reindeer Lake system), resulting in a soft alkaline-bicarbonate water at its mouth.

Waters in the Mackenzie River system vary from very soft (less than 30 mg/l as $CaCO_3$) to very hard (more than 180 mg/l as $CaCO_3$), depending upon whether they rise in the Canadian Shield, Cordilleran or Interior Plains regions.

The quality of surface water is directly affected by the activities of man through the release of industrial, agricultural and municipal waste material into surface water supplies. These wastes can be described as: a) degradable — wastes that can be broken down by bacteria — commonly called "oxygen demanding" wastes; (b) non-degradable — wastes that retain their molecular composition when deposited in water, such as inorganic suspended solids from industrial and domestic sources and compounds containing heavy metals like mercury or lead; (c) persistent — wastes that are residual and resist natural decay and other forms of treatment, such as some pesticides and herbicides, and petroleum and its products.

Many water bodies in southern Saskatchewan are eutrophic.[*] Nuisance growths of algae and aquatic weeds often occur during the summer months. These growths are aesthetically unattractive, hinder recreation and make water difficult to treat for drinking and industrial purposes.

Blooms of blue-green algae have been prominent in the lakes of the Qu'Appelle River system over the last two decades and were reported in Mission Lake and Echo Lake as early as 1882. These blooms are associated with high levels of nutrients in the lakes as well as high nutrient loadings derived from land runoff, domestic sewage and agricultural sources.

Existing knowledge of conditions promoting nuisance growths is rather limited, but it is known that nutrient input should be reduced as much as possible. Nuisance growths in small areas can be chemically controlled through a manner and in such concentrations that they do not adversely affect the overall water quality.

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[*] The word "eutrophic" refers to a body of water which is very fertile (contains a high concentration of nutrients) and as a result has a high rate of plant growth.

Monitoring stations have been established throughout Saskatchewan in order to provide data on water quality. As part of this network, the federal Department of the Environment operates about 18 water quality sampling stations within the major drainage basins in Saskatchewan. The distribution of these stations is shown in Table 2-14. Additional stations are monitored in relation to special projects, such as the Poplar River power project and studies related to environmental contaminants such as mercury.

Water samples are collected on a monthly basis and are routinely analyzed for major ions, pH, specific conductance, colour, turbidity and total alkalinity. In addition, samples are analysed for fluoride, total organic carbon, phosphorus, ammonia and trace elements such as iron, manganese, aluminum, mercury, zinc, copper, lead and cadmium. A few samples are analysed for phosphorus, ammonia, chemical oxygen demand (COD), biological oxygen demand (BOD), herbicides and chlorinated hydrocarbons.

Table 2-14

Federal water quality stations in Saskatchewan by drainage basin

	International	Interprovincial
Assiniboine River	—	1
Churchill River	—	2
Lake Athabasca	—	—
Lake Winnipegosis	—	1
Missouri River	3	—
North Saskatchewan River	—	3
Old Wives Lake	—	—
Qu'Appelle River	—	1
Saskatchewan River	—	2
South Saskatchewan River	—	2
Souris River	3	—
Total	6	12

The Saskatchewan Department of the Environment Water Pollution Control Branch operates 401 water quality stations within the province. There are five main types of stations:

(a) Use and compliance stations

— to determine if water is suitable for specific uses and, where applicable, if the water meets required health criteria;

— to determine if municipal and industrial limits are being met;

— to provide assurance to the public that water resources are being protected; and

— to assess the effectiveness of treatment works and to identify cases where remedial action is required — 162 stations.

(b) Primary network

— basic long-term assessment stations developed in concert with the Prairie Provinces Water Board;

— primary network stations are similar in purpose to class D except these are the key stations of that type — 17 stations.

(c) Trend assessment

— to provide a long-term assessment at basic or indice stations in order to detect gradual long-term changes in water quality;

— to provide a historical bank of reference data on all major water bodies showing seasonal and other short-term variations;

— to provide a screening tool for identifying cases where further in-depth studies are required; and

— to provide historical baseline data for all other data collection categories — 222 stations.

(d) Impact assessment

— to identify potential water quality changes that could result from a project and to provide a basis for recommending mitigative measures;

— to provide baseline information as a bench mark for monitoring after project completion (i.e. in order to determine actual effects on water quality); and

— to provide the basis for identification of future use benefits and/or limitations that would result from a project — number of stations fluctuates.

(e) In-depth, problem-oriented assessment

— to provide the basis for establishment of basin-specific water quality objectives and for documentation of water use potential;

— to fully assess water quality problems tentatively identified by other periodic sampling;

— to provide the basis for water resource management including requirement of expensive waste and water treatment works; and

— to allow for predictions and/or modelling of planned actions — number of stations fluctuates.

Water samples are collected from the stations on an annual, semi-annual, quarterly, monthly, bi-monthly or weekly basis depending on the type of station and local developments.

Table 2-15 presents the station types and the drainage basins in which they occur. Samples taken from the stations are analyzed for total kjeldahl nitrogen, ammonia, nitrate, total phosphorus, orthophosphorus, biochemical oxygen demand (BOD), total suspended solids, volatile suspended solids, total organic carbon (TOC), chlorophyll, total coliforms, fecal coliforms, conductivity, pH, total alkalinity and chloride. Tests for heavy metals, chlorinated hydrocarbons and herbicides are performed at primary network stations regularly and at other stations where required. If necessary or requested, further analyses are done for phenols, flouride, cyanide, arsenic, colour, turbidity and algae.

Table 2-15

Provincial water quality stations by drainage basin

Basin	Station types			
	A	B	C	Total
Assiniboine River	8	—	14(8)*	22
Churchill River	1	2	21(1)	24
Cypress Hills	—	—	—	—
Kasba River	—	—	—	—
Lake Athabasca	8	2	11(8)	21
Lake Winnipegosis	5	—	13(5)	18
Missouri River	6	—	17(6)	23
North Saskatchewan River	34	2	26(34)	62
Old Wives Lake	3	—	2(3)	5
Qu'Appelle River	49	4	71(46)	124
Saskatchewan River	13	2	12(13)	27
South Saskatchewan River	20	3	20(20)	43
Souris River	15	2	15(17)	32
Tazin River	—	—	—	—
Total	162	17	222	401

* (Stations listed in another class.)
Classes D, E not shown due to fluctuations and overlap with other categories.

3. Ground water

Water that accumulates in the earth below the root zone of vegetation is known as ground water. Because ground water cannot be seen, a great deal of test drilling is required in order to locate underground water supplies and measure their capacities.

In southern Saskatchewan ground water occurs in voids between sedimentary particles in the saturation zone. Only sands and gravels have sufficient permeability to be classified as aquifers (waterbearing formations). Waterbearing sands and gravels occur in bedrock and glacial drift.

The preglacial valley aquifers are up to 90 m thick and 3 km wide; the glacial bedrock valley aquifers are of similar thickness but up to 20 km wide. The remainder of the drift aquifers are generally more extensive in area but are frquently less than 30 m thick.

Each of the aquifers shown in Figure 2-15 is capable of yielding millions of cubic metres of water per day. Table 2-16 presents a list of the major aquifers and an estimate of their possible yield.

4. Ground water quality

The quality of ground water in Saskatchewan varies considerably. The main problems experienced with ground water are excessive mineralization in the form of sulphates, nitrates, iron and manganese. Drift water is generally high in calcium and magnesium and, therefore, hard. Bedrock water is generally high in sodium and, therefore, soft.[*]

Most ground water has a range of 500 ppm to 2,500 ppm total dissolved solids. Water containing more than 1,500 ppm of dissolved solids is not considered desirable for municipal drinking water. Guidelines for private water supplies for domestic use recommend that total dissolved solids not exceed 3,000 ppm.

In general, water of "poor quality" for drinking, that is, highly mineralized, is unsuitable for irrigation of fine-textured clay lands. Such water may occasionally be used on sand or loam soils that are more permeable. Water with high sodium and alkalinity contents may cause problems, especially if the total hardness exceeds 1,000 mg/l of $CaCO_3$.

The quality of ground water can be impaired by the vertical percolation of waste products to the aquifer or by man's activities, such as waste disposal into waterbearing strata. Waste products that may percolate into the ground water can originate from airborne particulate matter discharged into the atmosphere by industry, solid waste disposal areas operated by municipal governments, feedlots and even private sewage disposal systems. Leachate from such sources may contain high levels of inorganic salts, organic matter and toxic organic compounds from biocide containers. The location of waste disposal grounds, feedlots and private sewage disposal systems is most important if the pollution of ground water is to be avoided.

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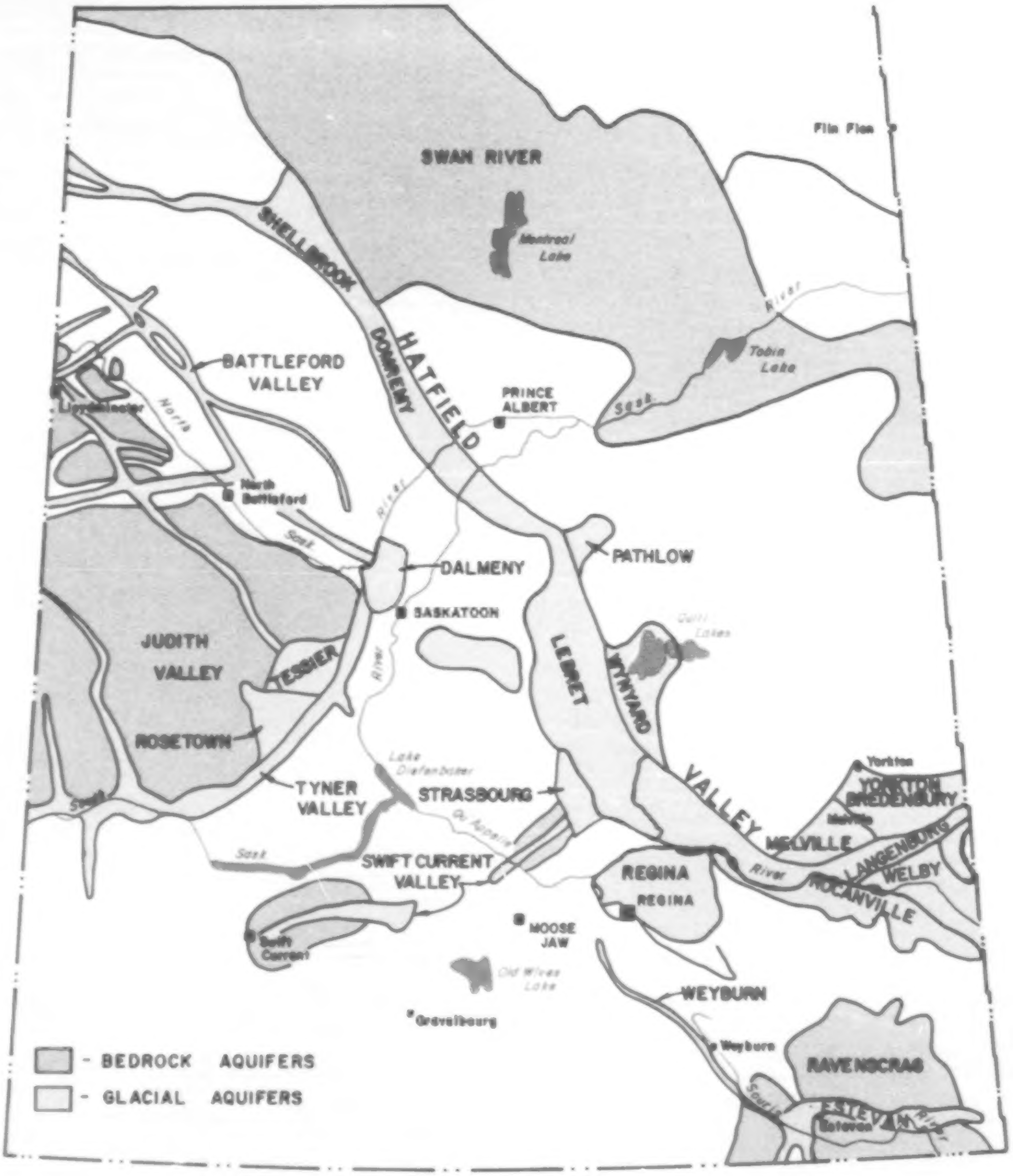
[*] Water is considered to be hard if it contains over 120 ppm calcium carbonate. Soft water contains 0-60 ppm calcium carbonate.

Table 2-16

Major aquifers of Saskatchewan

	Estimate of yield	
	'000s m³/year	'000s m³/day
A. Bedrock aquifers		
1. Judith River	12,335	31.81
2. Swan River	1,233,500	3,181.82
3. Ravenscrag	6,167.5	13.63
B. Glacial aquifers		
1. Hatfield Valley		
Shellbrook segment	61,675.0	136.36
Domremy segment	61,675.0	136.36
Lebret segment	6,167.5	13.63
2. Pathlow	6,167.5	13.63
3. Wynyard	32,071.0	68.18
4. Strasbourg	1,233.5	2.72
5. Yorkton-Bredenbury	14,802.0	40.90
6. Welby	3,700.5	9.09
7. Langenburg	7,401.0	18.18
8. Melville	3,700.5	9.09
9. Regina	30,837.5	81.81
10. Estevan	13,568.5	36.36
11. Weyburn	1,233.5	27.27
12. Tyner Valley	16,035.5	18.18
13. Dalmeny	7,401.0	18.18
14. Tessier	8,634.5	22.72
15. Rosetown	2,467.0	4.54
16. Battleford Valley	11,101.5	31.82
17. Rocanville Valley	6,167.5	13.63
18. Swift Current Valley	1,233.5	2.72


SWAN RIVER
Montreal Lake
Flin Flon
River
Tobin Lake
Sask
SHELLBROOK
DOMREMY
HATFIELD
BATTLEFORD VALLEY
Lloydminster
North
PRINCE ALBERT
North Battleford
Sask
River
DALMENY
PATHLOW
SASKATOON
Quill Lakes
JUDITH VALLEY
TESSIER
LEBRET
WYNYARD
River
ROSETOWN
Lake Diefenbaker
TYNER VALLEY
STRASBOURG
Yorkton
VALLEY
YORKTON
BREDENBURY
Melville
MELVILLE
Sask
Sask
Qu'Appelle
SWIFT CURRENT VALLEY
REGINA
REGINA
River
LANGENBURG
WELBY
ROCANVILLE
Swift Current
MOOSE JAW
Old Wives Lake
Gravelbourg
WEYBURN
Weyburn
RAVENSCRAG
Souris
ESTEVAN
Estevan
River
▨ - BEDROCK AQUIFERS
☐ - GLACIAL AQUIFERS

SASKATCHEWAN

DEPARTMENT OF THE ENVIRONMENT

POLICY, PLANNING AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN

MAJOR AQUIFERS OF SASKATCHEWAN

FIGURE 2-15

Chapter III

Land administration and land ownership[1]

A. Historical perspective

1. Pre-fur trade era

No record of land management exists prior to the beginning of the fur trade period in 1670. Indian peoples primarily depended on large animals for their living requirements; on the plains the buffalo provided many of the essentials for survival, while in the forested areas moose and caribou were hunted. The Indians were grouped in highly mobile tribal units which followed the animal populations as they migrated. Settlement and the individual possession of land were therefore foreign concepts to the Indian people.

Land was regarded as a common resource to be used with a high degree of stewardship. As Chief Joseph stated, "The earth and myself are of one mind. The measure of the land and measure of our bodies are the same . . . understand me fully with reference to my affection for the land. I never said the land was mine to do with it as I chose. The one who has the right to dispose of it is the one who has created it."[2]

2. The fur trade era

In 1670 the fur trade era was initiated with the granting of the charter of the Governor and Company of Adventurers of England Trading into Hudson Bay. The charter gave the company the right to hold and alienate lands and the sole right to trade in the Hudson Bay area and its hinterland. This area became known as Rupert's Land and included all land drained by waters finding their outlet into Hudson Bay. The northwestern part of present-day Saskatchewan was included in the North-Western Territory, an area leased to the Hudson's Bay Company. In the second half of the eighteenth century, competition from other fur traders resulted in the Hudson's Bay Company establishing trading posts in Saskatchewan, the first of which was built at Cumberland House in 1774. The rivalry between the Hudson's Bay Company, independent traders and later the Northwest Company meant that numerous trading posts were established. After the amalgamation of the Northwest Company and Hudson's Bay Company in 1921 the number of posts was reduced from 36 to 12, but this period represented the most organized and efficient period in the fur trade era.

3. The Dominion Lands Policy

Although there was scattered settlement and agricultural land use by the 1860's, two major events — Confederation in 1867 and the purchase of Rupert's Land in 1870 — precipitated a new era dominated by the Dominion Lands Policy. In the 60 year period from 1870 to 1930, the federal government assumed the power to legislate the disposal of public lands and the right to use and develop natural resources. Dispositions of farm land, as well as timber, mineral and grazing concessions and water rights, were made by the Government of Canada during this period. The administration of public lands was the most important activity of the federal government at this time, as its main purpose during these 60 years was to make Canada a real and effective confederation. The building of the Trans-Canadian railway and the disposition of lands to settlers were part of a strategy to consolidate Canada as one country and prevent loss of territory to the United States.

The Hudson's Bay Company sold Rupert's Land to Canada in exchange for $300,000, land around its trading posts up to 50,000 acres, and one-twentieth of the fertile belt later to be covered by the township survey system. Consequently, 3,351,000 acres of land in Saskatchewan were granted to the Hudson's Bay Company.

The government encouraged railway construction by making land grants of the odd-numbered sections under the survey system. In Saskatchewan in 1908 these lands totalled 15,177,063 acres. The government also granted or sold land to various land and colonization companies, which acted as agencies in the settlement process.

After reserving two sections of land in each township for eventual sale in support of schools — a total of 3,944,400 acres in Saskatchewan — the government still had even-numbered sections and, after 1908, odd-numbered sections surviving from the railway blocks, to dispose of through its "free homestead" policy and through direct sale to settlers as purchased homesteads and pre-emptions under *The Dominion Lands Act*. By the end of its period of administration, the Dominion Government had disposed of 29,003,000 acres of Saskatchewan lands through pre-emptions, purchased homesteads, sales to companies and individuals and miscellaneous grants such as those to war veterans.

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1) The material for this section was derived from: Canadian Council of Resource and Environment Ministers, *The Administration of Crown Lands in Canada*, Montreal, 1972.

Canadian Society of Technical Agriculturists, *Land Settlement*, A Report by a Canadian Society of Technical Agriculturists Committee, Ottawa, 1940.

T. A. Harper, "History of Resource Management in Saskatchewan," Unpublished Typewritten Notes, 1967.

Chester Martin, *Dominion Lands Policy*, Carleton Library No. 69, (Toronto: McClelland and Stewart Ltd., 1973).

J. Howard Richards and K. I. Fung, *Atlas of Saskatchewan* (Saskatoon: University of Saskatchewan, 1969), pp. 16-17.

Province of Saskatchewan, *Royal Commission on Agriculture and Rural Life* (Regina: Queen's Printer, 1955).

2) Canadian Council of Resource and Environment Ministers, *Proceedings: Man and Resources Conference*, Toronto, November 18-22, 1973, p. 52.

3) This was rescinded in a 1947 agreement.

Of the almost 80 million acres of land then surveyed in Saskatchewan, approximately 95 per cent had been alienated when the resources were transferred to the province on October 1, 1930. The rate of this dispersal was greatest in the decade from 1901 to 1911.

The settlement process was not completed without dispute. In order to allow white settlement, Indian treaties were signed with the plains tribes between 1871 and 1877. A total of 1,166,000 acres were thereby established as Indian reserves, primarily in the southern part of the province. With the influx of settlers, the Metis became apprehensive about their land and their future. The transfer of Rupert's Land to Canada gave them no direct assurance of title to land, even though they were already settled on the land. The Metis under Louis Riel had tried to prevent the land survey in Manitoba until their rights were assured; consequently, the *Manitoba Act* of 1870 set aside 1,400,000 acres of land for Metis families, 238,500 acres of which were in Saskatchewan. However, the intention of the *Manitoba Act* to guarantee the right of a Metis society to exist and prosper was followed neither in Manitoba nor in the South Saskatchewan River valley Metis settlements. The unrest of the Metis over land, religion and schools culminated in the North-West Rebellion of 1885.

In general, the utilization of other resources was secondary in importance to land alienation for the purpose of aiding the settlement process. An 1883 ordinance under the *North-West Territories Act* inaugurated some degree of protective control over wildlife in the surveyed agricultural belt. However, a settler could still kill any bird or animal for his immediate family's wants. By the 1880's the great herds of buffalo, which had for so long been a key resource of the Indian and Metis people, were eradicated. This period also witnessed the beginnings of the forest industry with the establishment of a sawmill in Prince Albert in 1880.

During the settlement era, the land and related wildlife and fisheries resources in northern Saskatchewan continued to support the indigenous Indian peoples. Change was signalled by the exploration activities of the newly established Geological Survey of Canada, particularly the work of J. B. Tyrrell in the 1890's. Metallic minerals were discovered in northern Saskatchewan during the first two decades of this century. Exploitation did not commence until 1930, however, with the establishment of the open pit zinc and copper mine at Flin Flon. The only other mining activity in the province prior to 1930 consisted of pit mining for domestic coal supplies in the Estevan area, clay mining near Bruno and Estevan, and sodium sulphate mining at various locations.

4. The Natural Resources Transfer Agreement

The province of Saskatchewan with its present-day boundaries was created in 1905. The administration and control of land and natural resources remained with Canada, however. During the 1920's the three prairie provinces became unanimous in their demand for the transfer of unalienated resources and the compensation for losses incurred as a result of land and resource disposition under the Dominion Lands Policy. Their united effort culminated in the *Natural Resources Transfer Agreement Act* of 1930.

The intention of this Act was to place Saskatchewan in an equal position with other provinces with respect to the control and administration of natural resources from the time of its creation in 1905. The schedule of the Act provided that the interest of the Crown in all Crown lands, mines, minerals and royalties be transferred from Canada to Saskatchewan. Saskatchewan had to honour existing agreements relating to lands and minerals already made by Canada, including those to the railway companies and the Hudson's Bay Company. Jurisdiction over water was also transferred to the province. Management, use and other rights concerning fisheries were transferred to Saskatchewan, although Canada retained the legislative jurisdiction. The province agreed to recognize established Indian reserves and to set aside future additional lands to meet Canada's obligations under the Indian Treaties. In addition, the province agreed to extend the Indian people's right to hunt, trap and fish for food at any time of the year on all unoccupied Crown lands. It was further agreed that the province would not dispose of any established historic site, bird sanctuary or public shooting ground and would set aside additional bird sanctuaries and public shooting grounds as agreed to by Saskatchewan and Canada.[3]

The *Natural Resources Transfer Agreement Act* also provided for financial compensation to cover the period 1905 to 1930. This amounted to an annual sum of $750,000, provided that the population of the province remained below 1,250,000. In 1948, for the sum of just over $8 million, Saskatchewan agreed to release Canada from all further claims respecting resources.

The provincial Department of Natural Resources was established in 1930 to handle the new responsibility for land and resources management. It was to deal with: Crown land allocation, management and disposition; forestry; water; mineral resources; and wildlife and fisheries. Many of the policies and programs initiated by the federal government during the Dominion Lands era were continued by the Department of Natural Resources; for example, the primary purpose of the Lands Branch, operating under *The Provincial Lands Act* passed in 1930, was the disposal of Crown lands either by lease or by alienation of title to farmers. However, new circumstances such as the depression, World War II and an expanding Canadian industrial economy meant that new policies were initiated with respect to resource use. Again using the Lands Branch as an example, these later activities included land aquisition, land improvement and classification, and community pasture development. The ratio of Crown to patented land in total acreage remained essentially the same, however. In 1930 just over 10 million acres in the southern agricultural zone were Crown holdings; in 1953, Crown land administered by the Lands Branch totalled approximately 9.6 million acres.

The depression years affected forest lands by causing a large-scale movement of homesteaders to the forest fringe areas of Saskatchewan. Forests growing on agricultural land were cut, stumps were pulled, and wood was burned. In addition, forest fires (both accidental and deliberate) devastated large areas of the southern forests. In 1937, for example, fires burned over two million acres, resulting in a timber loss of $400,000. The forest industry itself was largely unregulated, and consequently some areas and some species, particularly white spruce, were overcut. This relatively wasteful use of the forest resource is attested to by the establishment in 1947 of the Royal Commission of the Forest Resources and Industries of Saskatchewan.

It became evident that if the resources of the province were to be managed for the benefit of the people, changes were necessary. The pre-war period, therefore, marked the beginning of the modern era of stricter control and management of natural resources. Various marketing boards were established and government administrative changes were made. As it was recognized that the task of managing all natural resources could not be accomplished by one department, the Lands Branch was transferred from the Department of Natural Resources to the Department of Agriculture in 1947, and the Department of Mineral Resources was formed in 1953. Water resources administration also came largely under the jurisdiction of the Department of Agriculture. In 1964, the Saskatchewan Water Resources Commission was established to co-ordinate water resources management and use. Subsequently, in 1972, these functions of the Commission were absorbed by the Department of the Environment.

B. Present administration of land and related resources

This section concentrates on the present day administration of land and resources at the provincial level. The primary responsibility for such matters in Canada rests with the provinces under *The British North America Act*. However, it should be pointed out that the federal government still influences land and resources management in Saskatchewan through various incentive and regulatory mechanisms, such as ARDA and DREE[4] agreements, the *Fisheries Act* and the *Migratory Birds Convention Act*. Also, the federal government administers some Crown land in Saskatchewan in the form of a National Park, PFRA community pastures, Indian reserves and other designated areas. In summary, the federal parliament has sovereignty over Indian lands, national parks, migratory birds and the export of natural resources. The provinces exercise jurisdiction over public lands and forests, minerals, oil, natural gas, most recreational resources and non-migratory wildlife. Areas in which jurisdiction is shared by Canada and the provinces include agriculture, fisheries and water resources. In cases in which a public need is demonstrated, senior government can exercise jurisdiction over private land. Local government plays an influential role in land use in Saskatchewan through the authority delegated by the province under *The Urban and Rural Municipalities Acts*. Land use planning, largely through zoning and subdivision control, is the subject of *The Planning and Development Act;* under this Act, however, the onus is on the local government to undertake the planning or to request the same from the Department of Municipal Affairs, except with respect to Special Planning Areas which come under direct authority of the Minister.

The other major departments in the provincial government responsible for land and natural resources management are the departments of Agriculture, Tourism and Renewable Resources, Mineral Resources, and Northern Saskatchewan. The Department of Agriculture is the primary provincial administrative agency for agricultural lands. The Lands Branch and the Conservation and Land Improvement Branch under the Farm Resources Development Division influence agricultural land use; the Lands Branch is responsible for the administration of over nine million acres of provincial land. Lands are classified for agricultural use and leased or sold to farmers or ranchers, or assigned to community pastures and other community projects. The Conservation and Land Improvement Branch is responsible for flood control, diversion and irrigation on agricultural lands. This branch also administers conservation areas and is responsible for the development of under-utilized lands. The Animal Industry and Plant Industry Branches of the Production and Marketing Division also influence land use through their respective encouragement and promotion of the production and marketing of livestock and crops.

The Department of Tourism and Renewable Resources is responsible for tourism, recreation, fisheries, wildlife, forestry and Crown lands set aside for these purposes. Branches within Tourism and Renewable Resources have been established to manage these respective resources. The Department has both preservation and utilization responsibilities respecting natural resources.

The two branches of the Department of Mineral Resources most influential in land use are the Mines Branch and the Petroleum and Natural Gas Branch. The Mineral Lands Branch is responsible for the disposition of all Saskatchewan Crown minerals and for the administration of incentive programs to attract the mineral industry to Saskatchewan. The Petroleum and Natual Gas Branch is responsible for certain resource conservation, engineering and environmental management functions with respect to oil, natural gas and pipelines.

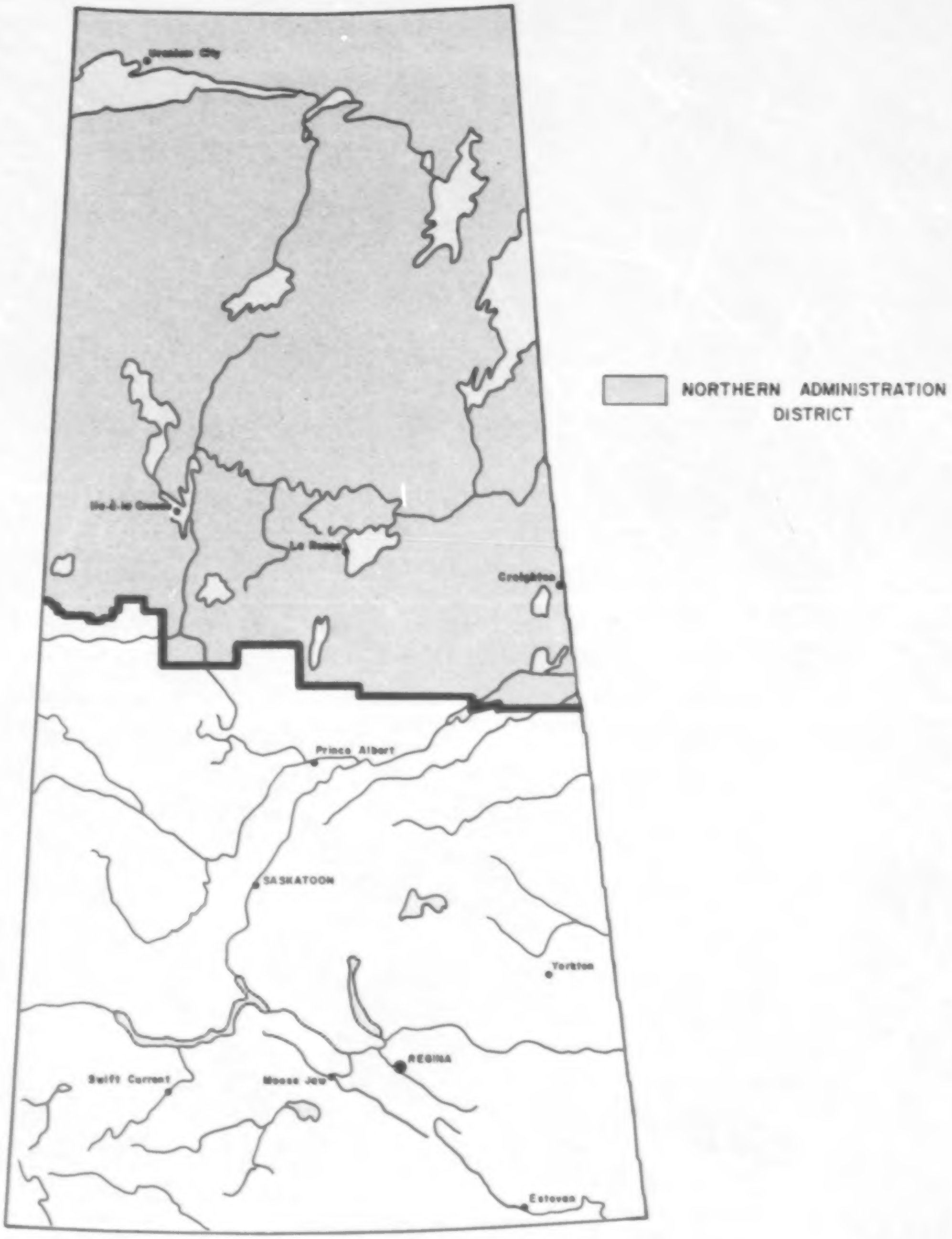
The Department of Northern Saskatchewan was established in 1972 to co-ordinate provincial government programs within the Northern Administration District (see Figure 3-1). Under the enabling legislation, the department "may provide for the investigation, planning, promotion, implementation and co-ordination of measures to foster and advance the social and economic development" of the residents of northern Saskatchewan. The Department therefore plans programs for land and natural resource management matters in the north, including agriculture, mineral resources and industrial development. The following Acts pertaining to land and resource use are administered by the Department of Northern Saskatchewan in the Northern Administration District; *The Fisheries Act, The Forest Act, The Wildlife Act, The Land Surveys Act, The Provincial Lands Act, The Provincial Parks Act*, and *The Mineral Resources Act*.

C. Land ownership

Land ownership should be a relatively simple topic to discuss and describe. However, no centralized, comprehensive data on land ownership in Saskatchewan are available. The Land Titles Branch of the Attorney General's Department records land ownership for patented land, but the information is not stored to allow rapid information retrieval. Also, the administration of Crown land is not accurately recorded by the Land Titles Office; this would have to be determined from the administrative agency in question.

A further complicating aspect of the question of land ownership is the ownership of resources beneath, on or above the land surface. A landowner does not usually own sub-surface mineral rights, for example, as these are usually retained by the Crown. Water is a provincial resource, and the land under the water belongs to the Crown as well. All wildlife which depends on land for food, shelter and habitat is also a Crown resource, whether it exists on Crown land or private land.

Agriculture and Rural Development Administration and Department of Regional Economic Expansion.


Uranium City
Ile-à-la Crosse
La Ronge
Creighton
Prince Albert
SASKATOON
Yorkton
REGINA
Swift Current
Moose Jaw
Estevan
▨ NORTHERN ADMINISTRATION DISTRICT

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POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
NORTHERN SASKATCHEWAN ADMINISTRATION DISTRICT

FIGURE
3-1

In addition, land use is not always what would be expected from a description of land ownership. For example, Crown lands designated as parks are obviously associated with recreational land use. Land in parks is not used solely for recreational purposes, however. Resource utilization activities such as timber production, oil and gas extraction, grazing and others all occur within park boundaries. Similarly, agricultural land also serves to satisfy recreational needs, such as hunting, bird watching, hiking and aesthetic pleasure.

Various land uses and the ownership characteristic of each use are discussed more fully in Chapter IV. However, an overview of land ownership in Saskatchewan is shown in Table 3-1 and Figure 3-2.

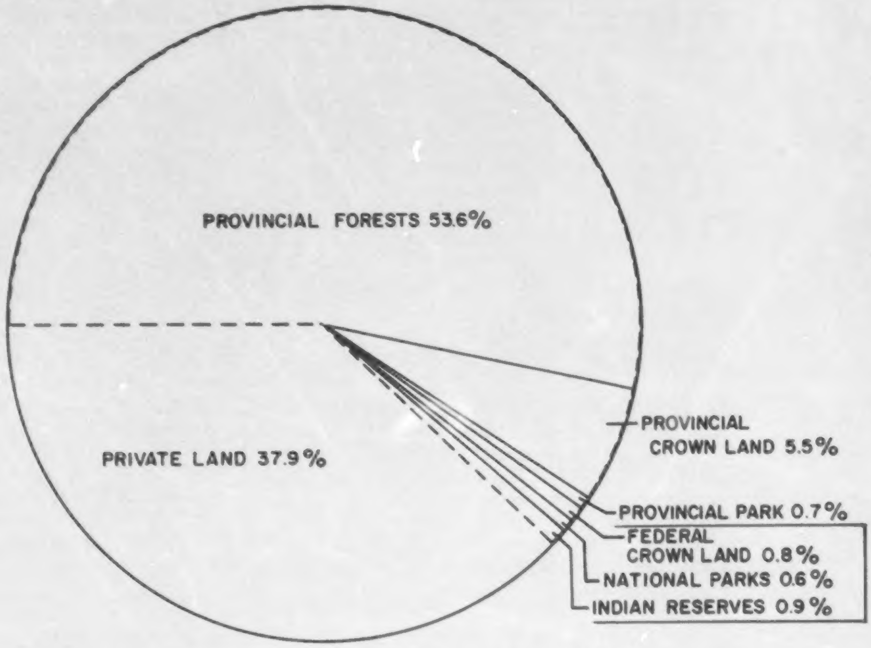
Table 3-1 shows that over 50 per cent of Saskatchewan is designated as provincial forest. This is the largest absolute and relative area of provincial forest in any province in Canada. Thirty-eight per cent of Saskatchewan's land has been alienated to private landowners. This is well above the Canadian provincial average; for example, only six per cent of the land in British Columbia is patented. As a percentage of Canada, Saskatchewan encompasses 24 per cent of all private land, five per cent of the national park land, 22 per cent of the Indian reserve land, two per cent of the provincial park land and 56 per cent of the designated forest land. For comparative purposes, Saskatchewan encompasses 6.5 per cent of Canada's area and 4.4 per cent of the total Canadian population.

Table 3-1

Saskatchewan land tenure

	Type	Area (square km)	Per cent of total
1.	Privately-owned, mainly agriculture	247,352	37.9
2.	Federal Crown land other than national parks and Indian reserves	5,452	0.8
3.	National Park	3,875	0.6
4.	Indian reserves	5,687	0.9
5.	Provincial Crown land other than provincial parks and provincial forests	35,716	5.5
6.	Provincial parks	4,810	0.7
7.	Provincial forests	349,009	53.6
	Total	651,900	100.0

Source: Statistics Canada, *Canada Yearbook 1976-77*. p. 43, Cat. No. CS11-202/1977, Ottawa, 1977.



SASKATCHEWAN **DEPARTMENT OF THE ENVIRONMENT** POLICY, PLANNING, AND RESEARCH BRANCH	**DIAGRAM OF LAND TENURE IN SASKATCHEWAN**	FIGURE 3-2

Chapter IV

Land uses

A. Present land use

The Canada Land Inventory is the only available inventory of present land use for any large area of Saskatchewan in which the total land area has been mapped and tabulated using a standard typology of land use categories. The area covered bv the Canada Land Inventory in Saskatchewan extends from the United States border to latitude 55 degrees north, an area of just over 85 million acres or 60 per cent of Saskatchewan.

The mapping for the Canada Land Inventory was carried out by air photo interpretation with field checks in questionable areas. The plotting was completed on 1:50,000 topographical map sheets. This land use information is now somewhat out-of-date, however, as the work was completed in 1966-67 with photographs up to 10 years old.

The land use information has been incorporated into the Canada Geographic Information System, a computerized storage and retrieval data bank, to facilitate its transformation into numerical data for analysis. The preliminary results of this analysis are shown in Table 4-1. This table shows that crop land (52 per cent), unimproved pasture and range land (21 per cent), non-productive woodland (14 per cent), and productive woodland (9 per cent) are the most significant land uses in terms of area covered in Saskatchewan south of the fifty-fifth parallel.

B. Agriculture[1]

1. Legislation

Section 95 of *The British North America Act* (1867) provides for the dual authority of federal and provincial governments over agriculture. It states:

Table 4-1

Saskatchewan present land use from the Canada Land Inventory

Land use category	Acreage	Per cent of CLI area
Urban built-up area	138,764	0.16
Mines, quarries, sand and gravel pits	16,009	0.02
Outdoor recreation	1,484,265	1.74
Horticulture	90	0.00
Orchards and vineyards	4,431	0.01
Crop land	44,076,776	51.73
Improved pasture and forage crops	534,951	0.63
Unimproved pasture and range land	18,118,347	21.27
Productive woodland	7,890,775	9.26
Non-productive woodland	11,578,007	13,59
Swamp, marsh and bog	906,913	1.08
Unproductive land — sand	0	—
Unproductive land — rock	51,702	0.06
Water	15,078	0.02
Unmapped areas	383,291	0.45
Total	85,199,399	100.02

Source: Lands Directorate, Environment Canada.

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[1] The material for this section was derived primarily from:

T. F. Joyce, *Provincial Agricultural Legislation in Western Canada*, Information Service Publication 72-8, Canada Department of Agriculture, 1972.

Saskatchewan Bureau of Statistics, *Saskatchewan Economic Review*, No. 31, 1977.

Saskatchewan Department of Agriculture, *Seventy-second Annual Report of the Department of Agriculture of the Province of Saskatchewan*, for the Twelve Months Ended March 31, 1977.

Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January, 1976, pp. 96-108.

Saskatchewan Department of the Environment, *Saskatchewan Environmental Legislation*, Policy, Planning and Research Branch, November, 1976, pp. 57-62 and 148-150.

Saskatchewan Executive Council, *Saskatchewan Economic Review*, Planning and Research, No. 26, 1972.

Statistics Canada, *Agriculture Saskatchewan*, 1976 Census of Canada, Catalogue 96-808, Volume IV — Part 3, Ottawa, February, 1978.

Table 4-2

Provincial and federal acts affecting the use of agricultural lands in Saskatchewan

Saskatchewan legislation
The Department of Agriculture Act
The Agriculture Development and Adjustment Act
The Pollution (By Livestock) Control Act
The Conservation and Development Act
The Land Bank Act
The Soil Drifting Control Act
The Department of Northern Saskatchewan Act
The Rural Municipality Act
The Game Act
The Family Farm Improvement Act
The Surface Rights Acquisition and Compensation Act
The Stray Animals Act
The Expropriation (Rehabilitation Projects) Act
The Saskatchewan Loans Act
The Pest Control Products Act
The Co-operative Production Association Act
The Mineral Resources Act
The Provincial Lands Act
The Land Titles Act
The Saskatchewan Farm Ownership Act
The Planning and Development Act
Federal legislation
Agriculture and Rural Development Act
Prairie Farm Rehabilitation Act
Department of Regional Economic Expansion Act
Prairie Farm Assistance Act
The British North America Act

> "In each province the legislature may make laws in relation to agriculture in the province and to immigration into the province and it is hereby declared that the Parliament of Canada may from time to time make laws in relation to agriculture in all or any of the provinces and to immigration into all or any of the provinces; and any law of the legislature of a province relative to agriculture or to immigration shall have effect in and for the province as long and as far only as it is not repugnant to any act of the Parliament of Canada."

As shown in Table 4-2, a number of federal and provincial acts affect the use of agricultural lands in Saskatchewan. Legislation discussed in this section will relate to the following land use categories: patented land, leased Crown land, vacant Crown land, PFRA community pastures, provincial community pastures, and association community pastures.

(i) Saskatchewan legislation

The Department of Agriculture Act, R.S.S. 1978, c.D-8

This Act provides for the administration of all agriculture in the province by the Department of Agriculture, with the exception of agriculture in the Northern Administration District which is administered by the Department of Northern Saskatchewan.

The Agriculture Development and Adjustment Act, R.S.S. 1978, c.A-9

This Act permits the Department of Agriculture to construct projects to improve the utilization of the agricultural resources of the province. The Provincial Community Pastures Regulations made under the Act allow the Minister of Agriculture to establish and operate community pastures on provincial lands controlled by the Department of Agriculture.

The Co-operative Production Association Act, R.S.S. 1978, c.C-37

This Act provides for the incorporation of the following co-operative associations: farm associations, livestock associations, grazing and fodder associations, and land improvement associations. It also outlines the powers of an association and deals with bylaws, membership, directors and officers, meetings, management and administration as well as amalgamations, dissolution and duties of the registrar.

The Provincial Lands Act, R.S.S. 1978, c.P-31

This Act provides that provincial lands lying outside provincial forests, parks and protected areas are to be administered by the Department of Agriculture. The Act describes the method whereby these lands may be sold or leased and the reservations to the Crown of such matters as road rights, water rights, mineral rights and timber rights. It also describes the methods by which rents and royalties may be recovered and lands repossessed by the province.

The Land Bank Act, R.S.S. 1978, c.L-2

This Act is administered by the Land Bank Commission responsible to the Minister of Agriculture. The purpose of the Act is to assist residents of Saskatchewan to establish or maintain family farms in Saskatchewan by increasing their opportunities of acquiring land for farming and disposing of their farm land at "fair and just" prices.

The Department of Northern Saskatchewan Act, R.S.S. 1978, c. D-22

This Act provides for assistance in agricultural improvements and diversification for people in the Northern Saskatchewan Administration District.

The Expropriation (Rehabilitation Projects) Act, R.S.S. 1978, c.E-17

This Act provides that the Minister of Agriculture may take possession of any land required for any project undertaken under the *Prairie Farm Rehabilitation Act* (Canada), including establishment of community pastures and grazing reserves and construction of works for irrigation or water supply. Compensation will be provided from moneys made available by the Government of Canada for the purpose.

The Land Titles Act, R.S.S. 1978, c.L-5

Under this Act eight registration districts were established in Saskatchewan with provision that the Lieutenant Governor in Council may establish others as land settlement and the exigencies of the public service require. There is to be a land titles office in each district. Any person owning land may apply for registration under this Act. It outlines provisions concerning certificate of title, instruments that may be registered, involuntary transfer of title and court and other proceedings.

The Saskatchewan Farm Ownership Act, R.S.S. 1978, c.S-17

This Act is administered by the Saskatchewan Farm Ownership Board. It restricts the amount of land to which non-residents and non-agricultural corporations may hold title.

(ii) Federal legislation

Prairie Farm Rehabilitation Act, R.S.C. 1970, C.P.-17

This Act, administered by the federal Department of Agriculture, provides for extensive land use adjustment programs. The provincial government provides the land and may take responsibility for the programs under *The Expropriation (Rehabilitation Projects) Act*. The Act provides for the development and promotion of good farm practices, tree planting, water supply, land utilization and settlement to rehabilitate drought and soil-drifted areas.

The Act also allows the Minister to undertake the development, construction, promotion, operation and maintenance of any project undertaken under this Act. This includes technical and financial assistance in Manitoba, Saskatchewan and Alberta.

2. Agricultural land use types

In Saskatchewan, agricultural lands can be classified as patented land or Crown land. Crown land can be either federal Crown land (PFRA community pastures) or provincial Crown land. Provincial Crown land can be sub-divided into: a) leased, b) vacant, and c) provincial community pastures. Land can be leased either to individual farmers and ranchers or to co-operative grazing associations for the purpose of forming association community pastures. Table 4-3 shows the acreage and percentage of these agricultural land use types.

(i) Patented land

Agricultural holdings in Saskatchewan are classified by tenure, depending on whether the operator owns, rents or leases land. Patented land is land owned; that is, held under title. In 1976, privately owned land in Saskatchewan amounted to 57.3 million acres, all located in the southern half of the province.

(ii) Prairie Farm Rehabilitation Administration community pastures

Under an amendment to the *Prairie Farm Rehabilitation Act*, 1973, a land utilization program was introduced by the federal government. The main objective of a PFRA community pasture is rehabilitation of submarginal lands to increase production of livestock and facilitate improved land use. A further objective is rehabilitation and stabilization of farm units in surrounding areas at reasonable levels of employment and income.

The Community Pasture Branch of PFRA is responsible for administration and management of all pastures. PFRA establishes the annual carrying capacity of each pasture based on sound range management principles. A resident manager is responsible for the management and operation of each pasture.

There are 72 PFRA community pastures with a total area of approximately 1,799,809 acres in Saskatchewan at the present time. About 68.7 per cent of this land is held in tenure by PFRA, 28.3 per cent is leased provincial Crown land and 3.0 per cent is Indian reserve land. PFRA pastures, which average 25,000 acres in size, tend to be the largest type of community pasture in the province. Table 4-4 summarizes information on PFRA community pastures, and Figure 4-1 shows the location of each pasture.

Table 4-3

Agricultural land use types

Type	Area in acres	Percentage of the total
Patented land	57,319,924	87.52
Crown land		
PFRA community pastures (title with Canada)	1,237,119	1.88
PFRA community pastures on Indian reserves	53,350	0.08
Provincial Crown leased to PFRA	509,340	0.77
Provincial Crown leased to individual farmers and ranchers	4,266,433	6.51
Provincial Crown vacant	690,252	1.05
Provincial community pastures	777,231	1.18
Association community pastures	646,350	0.98
Total Crown land	8,180,076	12.45
Total	65,500,000	99.97

Table 4-4

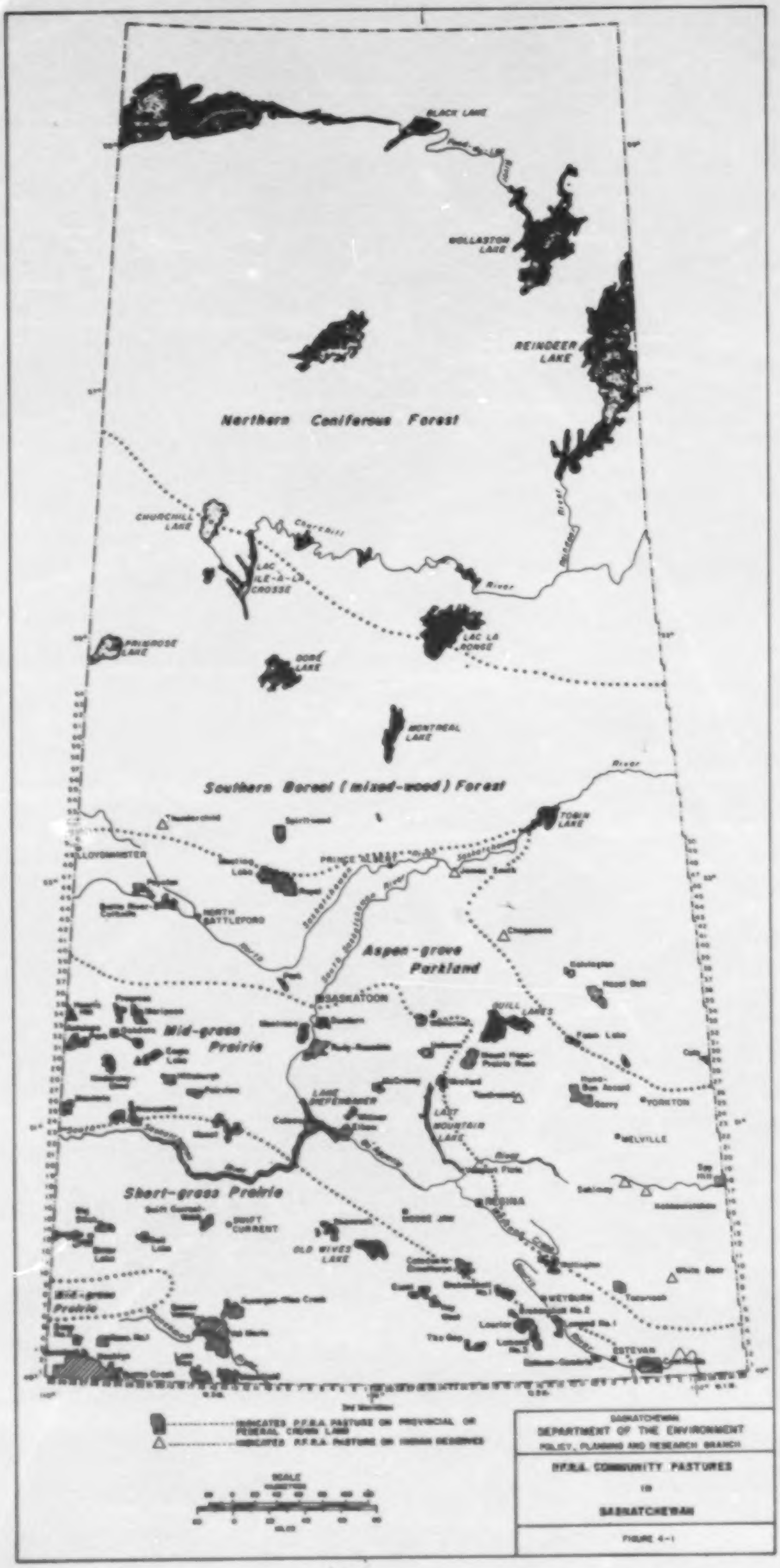
PFRA community pastures

Name	Date established	General location	Area (in acres)				Habitat[2] type	Other designations
			Title	Lease[1]	Indian reserve land	Total		
Antelope Park	1950	31-29-W3	1,102.2	33,027.9		34,130.1	2	Wildlife Management Unit
Auvergne-Wise Creek	1938	7-13-W3	29,250.9	14,102.5		43,353.4	1	
Battle Creek	1938	1-25-W3	67,276.3	2,391.0		69,667.3	1	
Battle River-Cutknife	1938	45-19-W3	30,033.4	371.5		30,404.9	3	Contains a Regional Park
Beaver Valley	1938	6-15-W3	58,453.9			58,453.9	1	Contains a Protected Area
Big Stick	1939	14-25-W3	19,947.2			19,947.2	1	
Bitter Lake	1942	13-27-W3	31,940.2	11,231.7		43,171.9	1	
Brokenshell No. 1	1937	9-18-W2	22,558.4			22,558.4	1	Wildlife Management Unit
Brokenshell No. 2	1937	7-17-W2	8,128.7			8,128.7	1	Wildlife Management Unit
Caledonia-Elmsthorpe	1949	11-21-W2	640.0	25,711.4		26,351.4	1	
Chagoness	1967	42-16-W2			5,813.0	5,813.0	4	
Coalfields	1937	1-4-W2	17,499.4	15,788.9		33,288.3	1 & 2	
Coteau	1938	24-6-W3	21,710.1	1,274.2		22,984.3	2	
Cote	1958	29-30-W1	954.6	5,152.0		6,106.6	4	Contains a Regional Park
Dundurn	1937	32-5-W3	19,970.4	37,669.0		57,639.4	2	
Eagle Lake	1939	30-21-W3	17,874.1	5,391.5		23,265.6	2	
Elbow	1939	24-3-W3	19,687.2	3,211.0		22,898.2	2	Wildlife Mangement Unit and part of a Provincial Park
Estevan-Cambria	1937	2-9-W2	6,586.8			6,586.8	1	Wildlife Management Unit
Excel	1937	9-25-W2	20,722.3			20,722.3	1	Contains part of a Regional Park
Fairview	1956	27-17-W3	2,445.2	15,103.3		17,548.5	2	
Foam Lake	1961	32-10-W2		10,361.7		10,361.7	3 & 4	
Garry	1943	26-9-W2	20,144.7			20,144.7	3	
Govenlock	1938	1-28-W3	67,220.0	1,274.0		68,494.0	1	
Gull Lake	1941	14-21-W3	2.2	10,517.1		10,519.3	1	
Hazel Dell	1963	36-8-W2	480.0	32,011.0		32,651.0	4	
			(160 acres patented)					
Heart's Hill	1938	34-28-W3	15,602.4			15,602.4	2	Wildlife Management Unit
Hillsburgh	1940	28-19-W3	13,592.8			13,592.8	2	
Ituna-Bon Accord	1946	27-10-W2	24,159.0			24,159.0	3	
James-Smith	1966	48-20-W2			5,577.0	5,577.0	3	
Kahkewistahaw	1963	18-4-W2			7,500.0	7,500.0	3	
Kelvington	1962	38-10-W2	160.0	7,974.6		8,134.6	4	
Key West	1937	8-24-W2	9,894.1			9,894.1	1	
Kindersley-Elma	1938	30-25-W3	20,944.8			20,944.8	2	
Laurier	1937	6-16-W2	36,487.6			36,807.0	1	
			(319 acres patented)					
Lomond No. 1	1938	6-13-W3	23,120.7	168.5		23,289.2	1	
Lomond No. 3	1940	4-15-W3	17,971.9			17,971.9	1	Wildlife Management Unit
Lone Tree	1940	1-16-W3	33,238.9			33,238.9	1	
Mantario	1950	25-29-W3	160.0	24,796.0		24,956.0	2	Wildlife Management Unit
Mariposa	1937	34-22-W3	26,363.6			26,363.6	2	Contains a Wildlife Management Unit
Masefield	1940	1-13-W3	26,989.1	9,700.1		36,689.2	1	
McCraney	1949	28-28-W2	160.0	10,404.0		10,564.0	2	
Meeting Lake	1950	46-9-W3	1,509.0	64,605.5		66,114.5	3	
Monet	1940	24-13-W3	46,798.7			46,798.7	1 & 2	
Montrose	1937	33-7-W2	18,867.2	3,830.1		22,697.3	2	
Mount Hope-Prairie Rose	1957	30-20-W2	635.4	27,613.7		28,249.1	3	Wildlife Management Unit
Nashlyn	1938	2-26-W3	60,643.5			60,643.5	1	
Newcombe	1937	25-24-W3	44,299.1			44,299.1	1 & 2	Wildlife Management Unit
Oakdale	1938	32-22-W3	20,363.3	320.0		20,683.3	2	
Park	1937	38-9-W3	7,036.0			7,036.0	3	
Paynton	1939	46-22-W3	24,371.0			24,371.0	3	
Progress	1938	34-24-W3	19,401.6	597.3		19,998.9	2	Wildlife Management Unit
Reno No. 1	1938	4-25-W3	16,470.0	640.0		17,110.0	1	
Reno No. 2	1938	4-27-W3	11,375.8			11,375.8	1	
Royal	1950	47-8-W3	1,281.9	36,196.0		37,477.9	3	
Rudy-Rosedale	1937	31-5-W3	14,587.1	4,611.0		19,198.1	2	
Sakimay	1963	18-6-W2			7,030.0	7,030.0	3	
Shamrock	1940	15-4-W3	22,045.5	4,640.3		26,685.8	1	
Spiritwood	1962	52-9-W3		25,072.2		25,072.2	4	
Spy Hill-Ellice	1940	18-30-W1	18,957.7	635.3		19,593.0	3	
Swift Current-Webb	1938	15-15-W3	19,200.0	4,640.0		23,840.0	1	
Tecumseh	1944	9-7-W2	805.4	18,129.6		18,935.0	3	
The Gap	1937	4-20-W2	12,995.7	422.4		13,418.1	1	
Thunderchild	1970	52-20-W3			8,610.0	8,610.0	4	
Touchwood	1968	27-15-W2			9,220.0	9,220.0	3	
Usborne	1937	31-24-W2	12,580.8			12,580.8	2	
Valeport Flats	1962	20-21-W2	1,425.4			1,425.4	2	Game Preserve
Val Marie	1938	4-14-W3	98,495.8	160.0		98,655.8	1	Contains a Federal Bird Sanctuary
Wellington	1944	11-13-W2	800.0	25,116.6		25,916.6	2	
White Bear	1967	9-2-W3			9,600.0	9,600.0	3	
Willner	1953	26-2-W3		12,786.0		12,786.0	2	
Wolverine	1941	34-24-W2	16,025.7	652.0		16,677.7	2 & 3	
Wreford	1938	26-22-W2	12,674.8	1,040.0		13,714.8	2 & 3	

1/ Leased from the Province of Saskatchewan

2/ Key to habitat type —
1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest
5. Northern Coniferous Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 101.
Personal Communication.


BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill River
LAC ILE-A-LA CROSSE
PRIMROSE LAKE
DORE LAKE
LAC LA RONGE
MONTREAL LAKE
Southern Boreal (mixed-wood) Forest
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
NORTH BATTLEFORD
Aspen-grove Parkland
SASKATOON
QUILL LAKES
Mid-grass Prairie
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
YORKTON
MELVILLE
REGINA
Short-grass Prairie
SWIFT CURRENT
MOOSE JAW
OLD WIVES LAKE
WEYBURN
ESTEVAN
Mid-grass Prairie
3rd Meridian
INDICATES P.F.R.A. PASTURE ON PROVINCIAL OR FEDERAL CROWN LAND
INDICATES P.F.R.A. PASTURE ON INDIAN RESERVES
SCALE

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

P.F.R.A. COMMUNITY PASTURES
IN
SASKATCHEWAN

FIGURE 4-1

Extensive clearing, breaking and seeding of tame grass has been carried out in PFRA pastures. Over 331,000 acres of tame grass have been seeded in 63 pastures. In addition, 24,500 acres in 21 pastures of the Aspen-grove Parkland region have been cleared but not seeded. Over 100,000 acres of the pastures have been sprayed for brush and weed control. These practices have doubled the carrying capacity of many community pastures.

Primary use of PFRA community pastures, except for the Valeport Flats pasture, is grazing of livestock owned by persons whose major source of income is from farming. The 1,425 acre Valeport Flats pasture is used by area farmers under permit for the production and harvest of hay crops.

Twelve pastures are designated as wildlife management units; two are associated with regional parks and three contain either a game preserve, a protected area or a federal bird sanctuary. Oil and gas exploration on provincial lands leased to PFRA (permitted under *The Mineral Resources Act*) has been carried out, especially in pastures in the southwestern part of the province.

iii) Provincial Crown lands

Provincial Crown land in the agricultural area of the province is administered under *The Provincial Lands Act* and *The Agricultural Development and Adjustment Act*. About 8.2 million acres of agricultural land are provincial Crown land.

a) Leased Crown land

Crown land is leased to farmers and ranchers in Saskatchewan who require additional land to ensure that their unit base is adequate to support a family, a partnership or a group of families.

Crown land is advertised for lease as it becomes available through lease surrender or termination, land purchase or the development of vacant land to the point where it is economically feasible for production. Land allocations are determined by means of a point system.

Farmers and ranchers can usually lease Crown land suitable for cultivation or a cultivation-grazing combination for a period of 10 years. Land which is designated only for grazing is generally leased for a 21 year period.

In 1976, 4,851,855 acres of Crown land were leased for various uses, including grazing, cultivation, fodder and special non-agricultural uses. Table 4-5 presents information regarding leased Crown land in Saskatchewan. An additional 509,340 acres of provincial Crown land were leased for use as PFRA pastures.

b) Vacant Crown land

Approximately 690,252 acres of agricultural Crown land were vacant in southern Saskatchewan in 1976. Much of the land is vacant because of low productivity, inaccessibility, isolation, poor drainage, severe topography or stoniness, heavy tree cover or other physical causes. Some of this vacant Crown land is used for the production of native and tame hay.

Table 4-5

Provincial Crown land leased to farmers and ranchers 1976

	Acres	Number of individual lessees
Grazing	4,266,433	7,522
Cultivation	408,324	1,850
Fodder	158,610	1,032
Special non-agricultural	18,488	61
Total	4,851,855	10,465

Source: Department of Agriculture Saskatchewan Tub Sheets.

c) Provincial community pastures

Provincial community pastures are established and operated on provincial lands controlled by the Department of Agriculture. Mineral exploration and extraction are permitted in pastures under the provision of *The Provincial Lands Act* and *The Mineral Resources Act*.

Fifty-eight provincial community pastures, with a total area over 777,231 acres, have been established. Fifty-four of these (766,211 acres in area) were established as cattle pastures. Four pastures (Crooked River, Fairholm, Mayronne and Tompkins), with a total acreage of about 17,020 acres, were established as sheep pastures. Table 4-6 summarizes information on provincial community pastures, and Figure 4-2 shows the location of each pacture.

Prior to 1946, only one provincial community pasture (Matador) was in operation. From 1946 to 1962 an additional 24 pastures were established, 10 of which are in the grassland region of the province. Most of the 34 pastures established since 1962 are in the Aspen-grove Parkland and mixedwood forest regions. Of the 58 pastures, 41 are located in parkland or forest vegetation regions.

d) Association community pastures

A co-operative grazing association may use private land, leased provincial land or a combination of the two to establish an association community pasture. Information in this report pertains only to those associations leasing provincial land.

Association community pastures are controlled and managed by the individual grazing associations. The

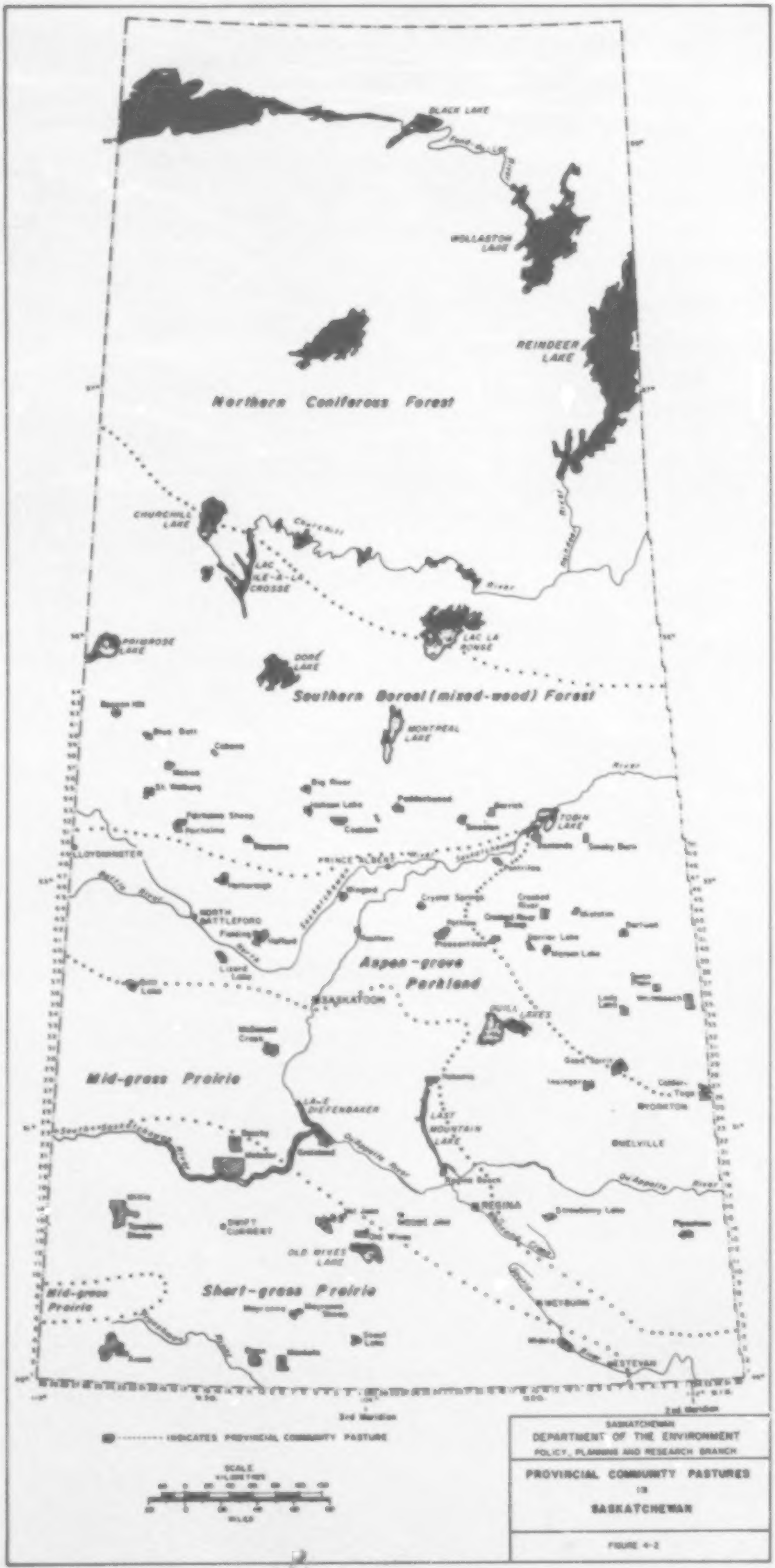
Table 4-6

Provincial community pastures

Name	Date first established	Location	Area (acres)	Habitat[1] type	Other designations
Arena	1946	4-23-W3	61,026	1	
Bapaume	1958	51-12-W3	7,058	4	
Barrier Lake	1955	41-13-W2	10,240	4	
Beacon Hill	1960	62-24-W3	8,640	4	
Beechy	1949	23-13-W3	25,430	2	
Bertwell	1959	42-5-W2	7,200	4	
Big River	1962	56-6-W2	8,145	4	
Blue Bell	1963	60-21-W3	5,040	4	
Cabana	1963	59-15-W3	3,070	4	
Calder-Togo	1965	26-30-W1	14,547	3	
Cookson	1949	53-3-W3	10,565	4	Wildlife Management Unit
Crooked River	1966	44-12-W2	7,600	4	
Crooked River Sheep	1966	44-12-W2	1,225	4	
Crystal Spring	1969	45-23-W2	5,280	3	
Dixon	1956	3-11-W3	36,320	1	
Donlands	1959	51-12-W2	7,760	4	
Fairholme	1966	51-18-W3	16,480	4	
Fairholme Sheep	1967	52-18-W2	2,240	4	
Fielding	1964	42-11-W3	9,920	3	
Garrick	1963	54-16-W2	4,400	4	
Good Spirit	1965	29-6-W2	14,720	3 & 4	
Grainland	1967	24-5-W3	15,606	2	
Grill Lake	1965	37-22-W3	8,307	2 & 3	
Hafford	1966	42-10-W3	10,645	3	
Hatherleigh	1959	47-14-W3	17,059	3	
Insinger	1968	28-9-W2	12,800	3	
Jackson Lake	1963	54-6-W3	4,857	4	
Lady Lake	1966	35-5-W2	4,965	4	
Lizard Lake	1948	40-14-W3	13,480	3	
McDonald Creek	1971	32-9-W3	20,160	2	
Makwa	1967	58-19-W3	11,640	4	
Mankota	1949	3-9-W3	39,476	1	
Marean Lake	1955	41-12-W2	5,000	4	
Matador	1922	21-13-W3	76,840	1	
Meyronne	1957	8-7-W3	9,920	1	
Meyronne Sheep	1967	8-7-W3	1,315	1	
Midale	1952	4-12-W2	15,800	1	Contains a Regional Park
Millie	1954	16-23-W3	60,631	1	
Mistatim	1960	44-9-W2	3,200	4	
Nokomis	1968	29-23-W2	13,700	2	
Old Wives	1969	15-1-W3	13,795	1	
Paddockwood	1968	54-25-W2	10,880	4	
Pathlow	1967	43-21-W2	11,484	3	
Pipestone	1966	14-33-W1	6,681	3	
Pleasantdale	1959	42-17-W2	6,815	3	
Pontrilas	1962	49-16-W2	6,560	3	
Regina Beach	1948	20-22-W2	5,681	2	
Rosthern	1966	42-1-W3	7,502	3	
Scout Lake	1952	5-1-W3	8,640	1	
Smeaton	1969	53-19-W2	8,476	4	
Smoky Burn	1960	51-8-W2	4,850	4	
St. Walburg	1963	55-21-W3	6,080	3	
Strawberry Lake	1967	16-13-W2	4,449	3	Contains a research and teaching area
Swan Plain	1968	37-2-W2	4,640	4	
Tompkins Sheep	1970	15-23-W3	6,240	1	
Valjean	1946	15-4-W3	28,541	1	
Whitebeech	1964	35-31-W1	17,360	4	
Winguard	1970	46-3-W3	6,240	3	

[1] Key to habitat type —
1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest
5. Northern Coniferous Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 104.
Saskatchewan Department of Agriculture, *Seventy-second Annual Report*, 1977, p. 17, 18.


BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill
River
LAC ILE-A-LA CROSSE
LAC LA RONGE
PRIMROSE LAKE
DORÉ LAKE
Southern Boreal (mixed-wood) Forest
MONTREAL LAKE
Big River
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
Battle River
NORTH BATTLEFORD
Saskatchewan
Lizard Lake
Crystal Springs
Aspen-grove Parkland
SASKATOON
QUILL LAKES
Mid-grass Prairie
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
YORKTON
MELVILLE
South Saskatchewan River
Qu'Appelle River
REGINA
SWIFT CURRENT
OLD WIVES LAKE
Short-grass Prairie
Mid-grass Prairie
WEYBURN
ESTEVAN
3rd Meridian
2nd Meridian
INDICATES PROVINCIAL COMMUNITY PASTURE
SCALE
KILOMETRES
MILES

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

PROVINCIAL COMMUNITY PASTURES
IN
SASKATCHEWAN

FIGURE 4-2

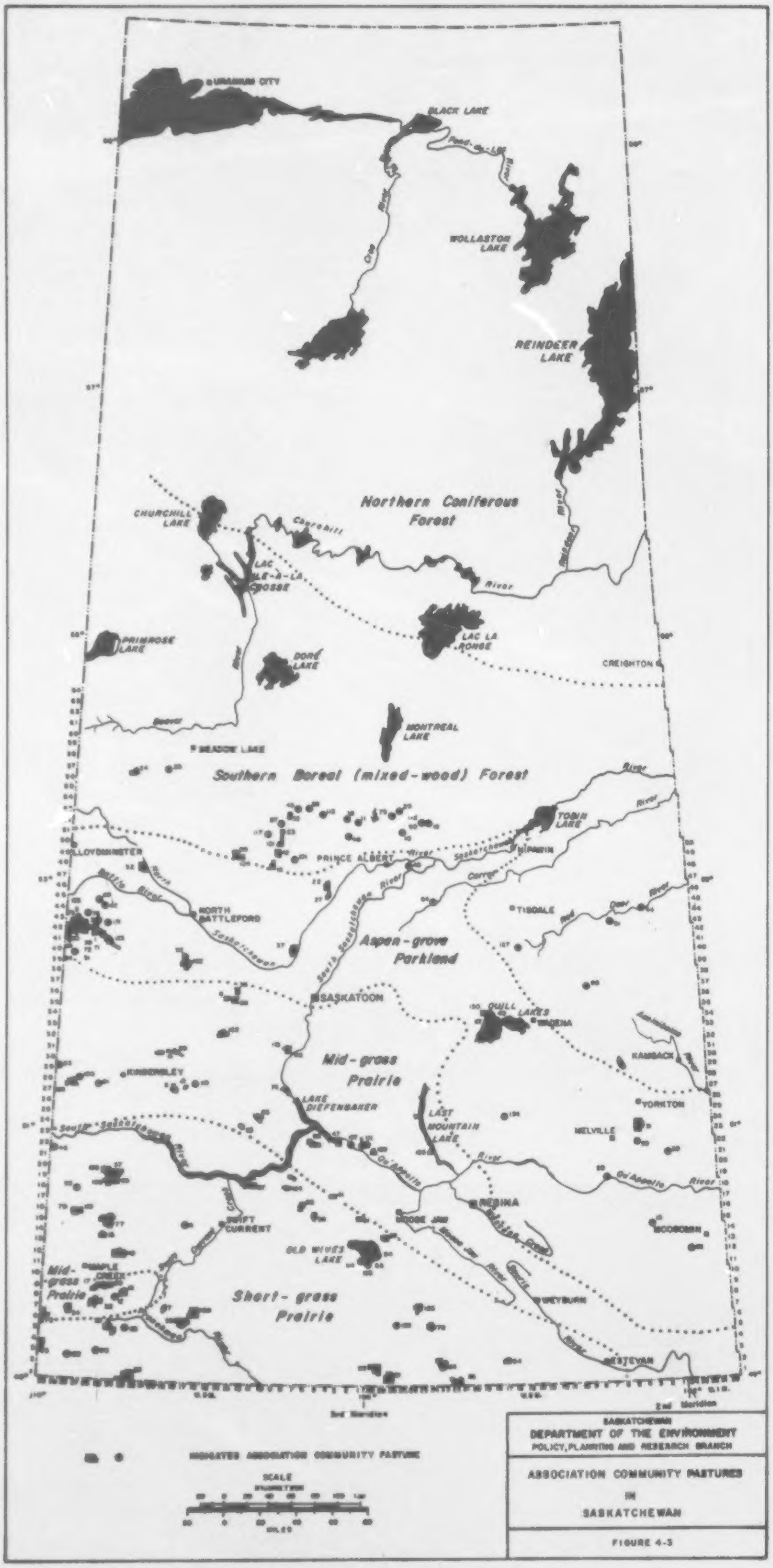
Table 4-7

Association community pastures

Name	Date established	General location	Area (acres)	Tenure	Habitat[1] type	Other designations
1 Airedale	1951	42-25-W3	5.023	Crown	3	
2 Alpine	1951	42-25-W3	5.429	Crown	3	
3 Altawan	1968	3-30-W3	10.241	Crown	1	
4 Antelope	1958	15-17-W3	1.605	Crown	1	
5 Artland	1951	43-27-W3	12.503	Crown	3	
6 Avalon	1954	36-13-W3	3.041	Crown	2	
7 Avon Heights	1953	7-19-W3	3.840	Crown	1	
8 Bad Lake	1958	27-18-W3	3.529	Crown	2	
9 Bedrock	1977	22-1-W3	4.038	Crown	2	
10 Beign	1948	52-24-W2	1.288	Crown	4	
11 Bell Lake	1959	53-1-W3	1.485	Crown	4	
12 Bench	1952	8-23-W3	950	Crown	1	
13 Beynes	1966	15-3-W2	1.604	Crown	3	
14 Big Beaver	1961	3-23-W2	11.229	Crown	1	
15 Big Stick Stockmen's	1924	14-24-W3	6.394	Crown	1	
16 Big Stone	1953	48-9-W3	4.056	Crown	4	
17 Birch and Maple	1958	9-25-W3	5.545	Crown & Patented	1	
18 Birch Bark	1968	53-22-W2	637	Crown	4	
19 Black Hills	1950	9-23-W3	3.523	Crown	1	
20 Blue Berry	1951	57-19-W3	1.760	Crown	4	
21 Borderland	1964	1-28-W2	5.598	Crown	1	
22 Brightholm	1968	47-4-W3	3.689	Crown	3	
23 Bronco	1958	52-8-W3	2.718	Crown	4	
24 Bronson	1953	57-22-W3	6.087	Crown	4	
25 Buffalo Valley	1958	24-12-W3	800	Crown	2	
26 Chaplin Lake	1954	16-5-W3	2.241	Crown	1	
27 Chirnside	1957	46-4-W3	3.195	Crown	3	
28 Claydon	1918	1-22-W3	26.754	Crown	1	
29 Clearwater	1962	54-25-W2	2.076	Crown	4	
30 Coma Park	1966	21-1-W2	3.504	Crown	3	
31 Crescent	1966	24-4-W2	5.407	Crown	3	
32 Cypress Hills	1978	7-25-W3	10.670	Crown	2	
33 Debden Big River	1974	53-7-W3	6.018	Crown	4	
34 Downey Lake	1951	7-27-W3	7.985	Crown	1	
35 Dry Coulee	1949	5-24-W3	10.945	Crown	1	
36 Eagle Hills	1950	37-12-W3	4.540	Crown	3	
37 East Borden	1931	41-7-W3	13.213	Crown	3	
38 East Cookson	1962	53-2-W3	2.798	Crown & Patented	4	
39 East Manito	1951	42-26-W3	4.219	Crown	3	
40 East Quill	1959	34-16-W2	1 [illegible]0	Crown	3	
41 Edgehill	1951	18-3-W3	4 160	Crown	1	
42 Edgewater	1962	50-9-W3	3.798	Crown	4	
43 Eldred	1957	54-7-W3	2.069	Crown	4	
44 Erwood	1971	44-3-W2	1.415	Crown	4	
45 Fir Ridge	1950	48-24-W2	596	Crown	3	
46 Forks	1962	22-29-W3	1.036	Crown	1	
47 Forsythe	1955	23-3-W3	7.304	Crown	2	
48 Foxdale	1951	51-2-W3	644	Crown	4	
49 Freemont	1957	45-25-W3	1.905	Crown	3	
50 Good Hope	1951	22-4-W2	636	Crown	3	
51 Gordon	1951	42-27-W3	4.422	Crown	3	
52 Grand Cheviot	1948	48-21-W3	9.291	Crown	3	
53 Graffie	1955	29-29-W3	3.472	Crown	2	
54 Grosnick	1954	3-17-W2	2.470	Crown	1	
55 Gunn	1955	6-17-W3	13.564	Crown	1	
56 Haunted Hills	1957	14-28-W2	2.518	Crown	1 & 2	
57 Heck Livestock	1925	20-24-W3	11.216	Crown	1	
58 Herschel	1958	31-18-W3	2.188	Crown & Patented	2	
59 Hyde	1964	19-7-W2	2.888	Crown	3	
60 Island Lake	1951	42-27-W3	3.984	Crown	3	Contains a Protected Area
61 Kalamazoo	1951	16-1-W3	2.551	Crown	1 & 2	
62 Kelso	1968	12-33-W1	1.699	Crown	3	
63 King George	1955	25-10-W3	5.017	Crown	2	
64 Kinistino	1946	45-22-W2	1.370	Crown	3	
65 Krollys	1947	5-22-W3	2.221	Crown	1 & 2	
66 Lake Johnson	1959	12-29-W2	1.857	Crown	1	
67 Lampard	1962	34-18-W2	5.606	Crown	3	
68 Lawson	1955	23-5-W3	8.634	Crown	2	
69 Lemsford Stockmen's	1924	19-23-W3	13.600	Crown	1	
70 Linacre	1948	16-27-W3	5.941	Crown	1	
71 Little Manito	1951	42-25-W3	4.538	Crown	3	
72 Lodge Lake	1951	42-27-W3	6.647	Crown	3	
73 Lostpine	1955	53-25-W2	1.745	Crown	4	
74 Macrorie	1966	28-8-W3	3.452	Crown	2	
75 Manito Cattle Breeders	1951	42-27-W3	25.823	Crown	3	
76 Manito Island	1961	43-26-W3	1.470	Crown	3	
77 Marrin	1951	15-24-W3	30.233	Crown	1	
78 Maverick	1966	6-24-W2	4.857	Crown	1	
79 Merryflat	1947	6-30-W3	11.217	Crown	1	
80 Mount Rumble	1949	17-6-W3	4.154	Crown	1 & 2	Part of a Game Preserve and adjacent to a Federal Bird Sanctuary
81 Neely Lake	1964	43-6-W2	2.575	Crown	4	
82 Neilburg	1958	44-25-W3	1.431	Crown	3	
83 North End	1951	41-28-W3	6.590	Crown	3	
84 North Evesham	1955	40-27-W3	800	Crown & Patented	3	
85 Paisley Brook	1975	1-22-W2	5.974	Crown	1	
86 Park Valley	1954	54-6-W3	1.624	Crown	4	
87 Pascal	1959	52-8-W3	2.550	Crown	4	
88 Perdue	1933	36-12-W3	6.811	Crown	2 & 3	
89 Piapot and Bear	1958	9-24-W3	9.897	Crown	1	
90 Pine Valley	1955	52-23-W2	640	CRown	4	
91 Pinkham	1955	28-25-W3	804	Crown	2	
92 Prarie Grazing	1972	40-17-W3	4.793	Crown	4	
93 Pro spect	1951	18-27-W3	1.120	Crown	1	
94 Reeveland Ranch	1973	12-29-W2	3.040	Crown	2	
95 Reserve	1958	50-13-W3	4.935	Crown	4	
96 Ridge Cliff	1957	3-25-W3	1.437	Crown	1	
97 Riverside	1963	19-11-W3	6.576	Crown	1	Within a Provincial Forest
98 Rockford	1969	37-8-W2	800	Crown	4	
99 Rockglen	1950	2-29-W2	7.065	Crown	1	
100 Rocky Springs	1950	28-27-W3	1.280	Crown	2	
101 Rolling Acres	1959	49-7-W3	2.196	Crown	4	
102 Rosemount	1951	39-17-W3	12.222	Crown	2	
103 Roslope	1955	28-28-W3	4.318	Crown	2	
104 Rothermere	1962	49-12-W3	3.825	Crown	4	
105 Sand	1955	12-29-W2	11.111	Crown	1	
106 Sandhills Stockmen's	1943	20-24-W3	7.518	Crown	1	Within a Wildlife Refuge
107 Sandy Lake	1958	23-2-W3	920	Crown	2	
108 Scotsguard	1957	7-16-W3	16.757	Crown	1	
109 Signal Valley	1325	19-24-W3	10.240	Crown	1	
110 Snowdown	1954	16-26-W3	4.318	Crown	1	
111 Squaw Creek	1958	23-29-W2	2.737	Crown	2	
112 Stony Swamp	1957	53-23-W2	1.115	Crown	4	
113 Stump Lake	1983	53-5-W3	1.294	Crown	4	
114 Sutton	1951	12-1-W3	2.080	Crown	1	
115 Swan Hill	1954	32-8-W3	3.680	Crown	2	
116 Swanson	1956	31-8-W3	7.522	Crown	3	
117 The North Creek	1962	51-10-W3	930	Crown	4	Contains a Recreation Site, a Game Preserve, Three Provincial Historic Markers
118 The "76" Ranch	1961	12-23-W3	1.295	Crown & Patented	1	
119 The Three "W"	1955	29-16-W3	1.283	Crown	2	
120 Toft Hill	1955	31-18-W3	2.478	Crown	2	
121 Twin Island	1959	51-9-W3	2.615	Crown	4	
122 Valley Centre	1954	33-15-W3	5.063	Crown	2	
123 Vera	1951	41-24-W3	11.887	Crown	2 & 3	
124 Vermillion	1960	19-8-W3	4.478	Crown	1	Game Preserve
125 Verwood	1956	6-27-W2	1.779	Crown	1	
126 Viceroy	1955	8-25-W2	3.892	Crown	1	
127 Wallwort	1962	41-14-W2	1.423	Crown	4	
128 Willow Bay	1950	22-23-W2	804	Crown & Patented	2	
129 Willow Bluff	1958	22-28-W2	3.680	Crown	2	
130 Wimmer	1958	35-18-W2	2.561	Crown	3	
131 Winter	1954	43-24-W3	3.198	Crown & Patented	3	
132 Worthy	1971	3-27-W3	3.198	Crown & Patented	1	
133 Yonker	1951	43-27-W3	8.589	Crown	3	
134 Zala	1948	26-16-W2	630	Crown	3	

[1] Key to Habitat Type —
1 Short grass Prarie
2 Mid-grass Prarie
3 Aspen grove Parkland
4 Southern Boreal (mixedwood) Forest
5 Northern Coniferous Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 109


URANIUM CITY
BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill River
LAC ÎLE-À-LA CROSSE
PRIMROSE LAKE
DORÉ LAKE
LAC LA RONGE
CREIGHTON
MONTREAL LAKE
MEADOW LAKE
Beaver
Southern Boreal (mixed-wood) Forest
TOBIN LAKE
NIPAWIN
PRINCE ALBERT
LLOYDMINSTER
NORTH BATTLEFORD
Battle River
North Saskatchewan
South Saskatchewan River
TISDALE
Aspen-grove Parkland
SASKATOON
QUILL LAKES
WADENA
KAMSACK
KINDERSLEY
Mid-grass Prairie
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
YORKTON
MELVILLE
Qu'Appelle River
REGINA
MOOSE JAW
MOOSOMIN
SWIFT CURRENT
OLD WIVES LAKE
MAPLE CREEK
Mid-grass Prairie
Short-grass Prairie
WEYBURN
ESTEVAN
3rd Meridian
2nd Meridian
INDICATES ASSOCIATION COMMUNITY PASTURE
SCALE
KILOMETRES
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SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

ASSOCIATION COMMUNITY PASTURES
IN
SASKATCHEWAN

FIGURE 4-3

standard lease defines the primary use of leased provincial land as the pasturing of livestock owned by members of the grazing association. The Saskatchewan Department of Agriculture determines the grazing capacity of the provincial lands and may compel changes in the use of the pasture if, in the department's opinion, the pasture is being substantially under-used or overgrazed. A "reasonable" portion of the leased land may be protected from grazing and native hay may be harvested, provided that the hay is not sold but used to feed cattle owned by the grazing association or its members.

With the consent of the Department of Agriculture, the grazing capacity may be increased by cultivation and planting grasses or legumes. Under the Department of Agriculture's Grazing Lease Improvement Program, all or part of the improvement costs may be recovered. Clearing, breaking and reseeding have taken place as a result of this program.

The standard grazing lease states that a "reasonable" portion of any tree growth on the leased land must be reserved by the lessee. The lessee is also required to provide reasonable care and protection for such growth and may be required to plant and care for trees supplied by the Department of Agriculture. In pastures of the aspen parkland region, brush regrowth control is done by aerial spraying of chemicals.

In 1978, there were 134 association community pastures in the province, with a total area over 646,350 acres. Table 4-7 summarizes information about association pastures and Figure 4-3 shows the location of each pasture.

Because mid-grass prairie lands are most suitable for cereal crop cultivation, most association pastures (104) are located in the short-grass prairie, aspen-grove parkland and mixedwood forest regions.

3. Agricultural products

i) Grain crops

Grain production in 1977 was generally lower than in 1976 but in some cases it exceeded the 10 year average. The 1977 wheat harvest, estimated at 12.4 million tonnes, was 15 per cent below 1976 production. This decrease was largely due to decreased yields per acre and an eight per cent decrease in total acreage planted (16,200,000 acres in 1977 compared to 17,700,000 acres in 1976). This 1977 wheat production was above the 10 year average of 10.3 million tonnes, and the acreage sown to wheat was also above the 10 year average of 14,912,000 acres.

The estimated 1.2 million tonnes of oats produced in 1977 represented an 11 per cent decrease in production from 1976 and an 11 per cent decrease compared to the 10 year average production of 1.4 million tonnes.

Barley acreage increased 20 per cent in 1977 over the 1976 level. The barley yield of 970 kg per acre was above the 10 year average yield for 1968-1977, and slightly lower than the record yield of 1,003 kg per acre established in 1976.

Rapeseed production increased markedly over 1976; acreage nearly doubled and production more than doubled in 1977. The 1,400,000 acres seeded produced 782,000 tonnes, representing an average yield of 558 kg per acre (above the 10 year average).

Flax acreage in 1977 was down from [illegible] 10 year average (626,000 acres) at 550,000 acres. Production amounted to 231,300 tonnes, almost equalling the 10 year average production of 243,600 tonnes, due to a record average yield of 439 kg per acre.

Table 4-8 presents information on acreage and production of principal crops in Saskatchewan for the years 1976 and 1977.

ii) Special crops

Potato production in 1977 suffered a 32 per cent drop from the previous year. Mustard seed production, however, showed a 36 per cent increase in production in 1977. Dry pea production also improved in 1977 showing a 26 per cent increase. Tame hay production

Table 4-8

Acreage and production of principal crops in Saskatchewan

Crop	Acreage		Production (tonnes)	
	1976	1977	1976	1977
Wheat	17,700,000	16,200,000	14,997,000	12,709,600
Oats for grain	1,600,000	1,550,000	1,388,000	1,233,800
Barley	2,950,000	3,700,000	2,961,000	3,592,500
Rye	267,000	250,000	180,340	152,400
Flax	200,000	550,000	86,360	241,300
Rapeseed	750,000	1,400,000	387,840	782,400

Source: Saskatchewan Department of Agriculture, *Agricultural Statistics*, Spring, 1978.

Table 4-9

Acreage, production and value of special crops in Saskatchewan 1976 and 1977

Crop	Acreage acres	Production tonnes	Price $/tonne	Value
Potatoes				
1976	2,500	27,900	69.88	$1,952,500
1977	1,700	19,000	99.21	1,884,960
Mustard seed				
1976	75,000	30,400	238.03	7,236,000
1977	100,000	47,600	213.56	10,165,600
Dry peas				
1976	14,000	9,450	135.19	1,277,500
1977	23,000	12,800	138.87	1,777,500
Tame hay				
1976	1,950,000	2,722,000	46.56	126,750,000
1977	2,150,000	2,711,200	52.91	143,448,000

Source: Saskatchewan Department of Agriculture, *Agricultural Statistics*, 1976, 1977, 1978.

decreased 0.4 per cent from 2,722,000 tonnes to 2,711,200 tonnes. With the increasing emphasis on agricultural diversification, it is anticipated that production of special crops in Saskatchewan will be considerably expanded in the future.

Table 4-9 presents information on the acreage and production of special crops in Saskatchewan for 1976 and 1977.

iii) Forage crops

Production of forage crops decreased significantly in 1977 from 1976. Forage crop seed production decreased 33 per cent (from 5,380 tonnes to 3,620 tonnes) in 1977. Table 4-10 presents additional information on the production of forage crop seed from 1968 to 1977.

iv) Livestock

a) Beef cattle

In 1977, Saskatchewan producers increased the total number of cattle and calves raised in the province by one per cent over the previous year. On July 1, 1977, the number of cattle and calves amounted to 2,936,000 head. Table 4-11 presents additional information on livestock populations in Saskatchewan.

b) Dairy cattle

Milk production increased by two per cent to 24,884,200 kg in 1976. Milk used for fluid purposes in 1976 increased six per cent over the previous year.

The 495 manufacturing milk producers in the province produced 9,176,720 kg of milk or 1,833,230 kg of butterfat. The eight creameries operating in Saskatchewan produced 3,749,656 kg of butter. Ice cream production, which used 5.3 per cent of the milk produced in the province, decreased by 3.7 per cent to 11,415,000 litres.

Table 4-12 shows the milk production and number of milk cows in Saskatchewan from 1972 to 1976.

c) Swine

Saskatchewan hog production decreased slightly in 1976. On July 1, 1977 the number of hogs on Saskatchewan farms was reported to be 500,000 compared with 523,000 at the same time the previous year.

d) Sheep

The number of sheep and lambs on Saskatchewan farms declined to 77,000 during 1977 from 99,000 the previous year.

e) Poultry

The poultry industry in Saskatchewan expanded in 1976. The total number of chickens placed in the province increased by 5.3 per cent to 10,203,083 birds during the year compared with 9,703,028 the previous year. All classes increased by a total of 0.5 million birds.

Total egg production for Saskatchewan was estimated at 18,635,000 dozen, a ten per cent drop in production from the previous year.

Meat production from poultry increased to 10,284,000 kg in 1976 from 9,432,000 kg the previous year, an increase of nine per cent.

Forty-eight flocks of chickens, turkeys and geese qualified under the Saskatchewan Hatchery Supply Flock Policy as a source of hatching eggs. The number of flocks qualifying under this program declined during the year by 14 flocks.

As Saskatchewan hatcheries were again unable to supply the provincial demand for chicks and poults, 72 per cent of the chicks, poults and hatching eggs required by producers were imported from other provinces. In Saskatchewan five hatcheries produced both chicks and poults, one produced poults only and eight produced chicks only.

4. Economic returns

Total Saskatchewan farm cash receipts in 1977 were $2,130,918,000, a decrease of $154,375,000 from the 1976 cash receipts of $2,285,293,000 (Table 4-13). Lower yields of grain and correspondingly lower grain prices accounted for the decrease. Cash receipts from crops decreased to $1,631,772,000 in 1977 from $1,812,229,000 in 1976 and $2,019,685,000 in 1976. Income from livestock and livestock products rose to $465,736,000 from $456,168,000 in 1976.

Table 4-14 presents information about the production and value of the principal grains produced in Saskatchewan. Table 4-9 provides production and value information about some of the special crops produced in Saskatchewan. Table 4-15 presents livestock marketing information for Saskatchewan.

Table 4-10

Saskatchewan forage crop seed production 1968-77

Year	Alfalfa (tonnes)	Sweet clover (tonnes)	Brome grass (tonnes)	Crested wheat-grass (tonnes)	Other* (tonnes)
1968	227	453	635	91	1,159
1969	45	3,629	272	181	864
1970	227	2,268	454	453	1,661
1971	340	907	816	453	1,669
1972	227	1,542	408	408	1,764
1973	159	907	453	453	2,299
1974	91	2,268	432	522	2,406
1975	125	1,588	306	91	1,956
1976	113	2,268	113	23	2,870
1977**	109	1,588	59	25	1,837

*Others include:	1976 (tonnes)	**1977 (tonnes)
Red clover — double cut	22.7	20
Red clover — single cut	2,268	1,361
Alsike clover	181	172
Timothy	363	277
Creeping red fescue	—	—
Meadow fescue	4.5	0.9
Russian wild rye grass	23	5.9
Bird's-foot trefoil	—	—
Intermediate wheatgrass	—	—
Slender wheatgrass	4.5	—
Tall wheatgrass	2.3	—
Streambank wheatgrass	0.9	—
Sainfoin	—	—
Reed canary grass	—	—
Total	2,869.9	1,836.8

Source: Saskatchewan Department of Agriculture, *Agricultural Statistics*, 1976, p. 53.
****Canadian Grains Industry Statistical Handbook*, 1978, p. 23-27.

Table 4-11

Livestock population of Saskatchewan* 1967-77

Year[1]	Milk cows[2]	Calves[2]	Other cattle[2]	Total cattle and calves[2]	Hogs[2]	Sheep and lambs[2]	All poultry[3]
1967	132	792	1,426	2,350	567	122	6,530
1968	118	758	1,351	2,227	513	124	5,805
1969	117	754	1,314	2,185	584	128	6,050
1970	115	813	1,470	2,398	1,010	132	7,460
1971	112	884	1,649	2,645	1,090	145	5,738
1972	100	945	1,725	2,770	938	142	5,823
1973	91	1,015	1,747	2,852	960	146	5,732
1974**	84	1,040	1,903	3,027	798	123	6,449
1975**	85	1,065	2,006	3,158	516	117	5,385
1976**	80	995	1,835	2,910	523	99	4,984
1977**	73	965	1,898	2,936	500	77	NA

*Numbers in thousands.

** As of July 1.

[1] As of June 1.

[2] Source: Saskatchewan Bureau of Statistics, *Saskatchewan Economic Review*, No. 31, 1977, p. 28.

[3] Source: Saskatchewan Agriculture, *Agricultural Statistics*, 1976, p. 63, and Spring, 1978.

Table 4-12

Milk production and milk cows on farms in Saskatchewan

Product	1972	1973	1974	1975	1976
Milk (kgs)	313,652	295,076	254,443	243,123	248,842
Milk cows on farms	90,000	90,000	86,000	85,000	80,000

Source: Saskatchewan Department of Agriculture, *Seventy-second Annual Report*, March 31, 1977, p. 22.

5. Farms and farmers

In 1976, the Census of Canada indicated that there were 69,578 farms in Saskatchewan. The average farm size was 939 acres. Table 4-16 presents information about the number and size of Saskatchewan farms.

According to the Census, total farm area of Saskatchewan in 1976 was 65,316,454 acres, of which 26,166,700 acres were under crop and 17,733,533 acres were in summerfallow. Table 4-17 compares the use of farm land in Saskatchewan for the years 1966, 1971 and 1976.

Table 4-13

Estimated cash receipts from the sale of farm products Saskatchewan, calendar years 1968 to 1977

— numbers in thousands —

	1968[1]	1969[1]	1970[1]	1971[1]	1972[1]	1973[1]	1974[2]	1975[2]	1976[3]	1977[3]
Wheat	$346,796	$280,202	$348,184	$422,589	$ 536,406	$ 590,430	$1,016,314	$1,095,357	$1,038,310	$1,075,634
Wheat CWB payments	205,870	37,265	5,195	47,184	80,070	229,491	323,736	546,117	264,345	74,099
Oats	3,720	4,726	4,576	11,513	5,269	6,249	14,612	16,452	18,803	12,559
Oats CWB payments	3,098	1,301	—	408	2,398	3,990	—	9,140	4,580	4,827
Barley	18,526	23,046	52,507	75,659	97,281	86,819	186,068	171,997	150,137	89,318
Barley CWB payments	12,064	954	—	6,481	1,344	43,165	39,449	66,448	16,724	36,649
CWB net cash advance payments	26,291	92,266	-54,848	-57,111	-12,892	-187,539*	-222,982	-67,068	151,341	71,733
Rye	3,307	2,890	4,663	5,552	6,289	8,334	9,177	9,621	12,089	9,501
Flaxseed	5,813	18,118	28,350	29,841	30,182	62,189	51,393	31,078	25,280	37,716
Rapeseed	14,896	27,489	52,404	74,241	71,822	136,306	150,776	115,483	110,828	194,812
Potatoes	197	168	220	192	273	524	610	534	699	718
Other crops	15,321	9,304	7,583	10,650	10,131	26,441	22,556	24,526	19,093	24,206
Total crops	$655,899	$497,729	$448,834	$627,199	$ 828,573	$1,006,399	$1,590,274	$2,019,685	$1,812,229	$1,631,772
Cattle and calves	$165,547	$134,781	$138,717	$176,750	$223,321	$268,768	$285,189	$ 311,581	$ 328,515	$ 339,172
Hogs	29,578	36,426	50,659	51,117	67,158	98,242	77,144	64,782	56,385	51,374
Sheep and lambs	896	937	914	926	1,012	1,214	1,629	1,961	2,034	1,132
Dairy products	18,767	19,263	19,902	19,920	20,773	21,957	26,396	31,805	32,744	37,234
Poultry	8,926	10,385	13,517	11,413	12,938	18,827	20,416	14,986	19,166	17,312
Eggs	5,208	5,908	7,232	7,201	7,177	9,186	10,812	10,985	10,597	11,031
Other livestock and products	3,334	3,544	3,249	8,342	5,334	6,842	6,390	5,976	6,727	8,481
Total livestock and products	$232,256	$211,244	$234,190	$271,169	$ 337,713	$ 425,036	$ 427,976	$ 442,076	$ 456,168	$ 465,736
Forest products	$ 58	$ 54	$ 204	$ 213	$ 239	$ 275	$ 304	$ 338	$ 380	$ 427
Dairy payments supplementary	4,748	3,252	2,700	2,748	3,060	3,820	5,541	5,726	5,655	5,946
Deficiency payments	153	137	129	79	2,703	4	15,073	1,171	1,607	5,237
Cash receipts from farming operations	893,114	712,416	686,057	901,408	1,172,288	1,435,534	2,039,168	2,468,996 —	2,285,293 —	2,130,918
**Supplementary payments	5,453	5,913	37,189	6,810	31,369	33,082	1,807	—	9,254	21,800
Provincial income stabilization	—	—	—	—	—	—	—			
Total cash receipts	$898,567	$718,329	$723,246	$908,218	$1,203,657	$1,468,616	$2,040,975	$2,468,996	$2,285,293	$2,130,918

* Includes $193,388 for deferred grain receipts.

** Payments made under the provision of the Prairie Farm Assistance Act, payments made under the Lift Program (1970) and payment under the Two-Price Wheat Program (1972).

[1] Source: Saskatchewan Department of Agriculture, *Sixty-ninth Annual Report of the Department of Agriculture of the Province of Saskatchewan*, for 12 months ended March 31, 1974, p. 15.

[2] Source: Saskatchewan Department of Agriculture, *Agricultural Statistics*, 1975.

[3] Source: Saskatchewan Department of Agriculture, *Agricultural Statistics*, Spring 1978.

Table 4-14

Production and value of the principal grains of Saskatchewan 1968-77

Prinicipal grains	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	Total	Ten-year average
Wheat (mil. of tonnes)	10.1	12.54	5.71	9.39	8.87	10.07	8.27	10.5	14.91	12.71	103.83	10.38
Average price/tonne ($)	49.4	47.4	53.32	49.60	69.09	169.01	159.16	134.50	101.70	98.47		
Value $ millions	95	577.92	304.50	465.75	612.88	1,702.00	1,316.32	1,412.55	1,507.00	1,251.56	9,649.43	964.94
Oats (mil. of tonnes)	1.14	1.56	1.65	1.71	1.22	1.53	1.16	1.33	1.59	1.23	14.11	1.41
Average price/tonnes ($)	31.80	34.31	34.31	33.75	57.63	96.41	94.40	90.53	80.97	68.29		
Value $ millions	36.26	53.53	56.71	57.72	70.31	147.51	109.50	120.40	128.75	84.00	864.69	86.46
Barley (mil. of tonnes)	1.74	2.37	3.11	5.48	3.85	3.57	2.91	2.83	2.93	3.59	32.39	3.24
Average price/tonne ($)	35.86	30.81	36.07	30.35	53.95	115.76	100.38	107.95	103.66	75.97		
Value $ millions	62.40	73.03	112.18	166.32	217.71	413.28	292.12	305.50	303.75	272.75	2,219.04	221.90
Rye (mil. of tonnes)	0.165	0.175	0.288	0.284	0.127	0.124	0.175	0.190	0.236	0.152	1.86	0.19
Average price/tonne ($)	40.18	33.71	33.94	31.65	59.05	101.12	87.08	102.63	84.70	88.81		
Value $ millions	6.63	5.90	7.74	8.99	7.50	12.54	15.24	19.50	19.99	13.50	117.53	11.75
Flax (mil. of tonnes)	0.116	0.287	0.652	0.327	0.228	0.226	0.119	0.149	0.096	0.241	2.45	0.25
Average price/tonne ($)	115.00	101.18	86.32	86.79	157.10	360.70	375.96	261.34	271.14	201.04		
Value $ millions	13.34	29.04	56.28	28.38	35.82	81.52	44.74	38.94	26.03	48.45	402.54	40.25
Rapeseed (mil. of tonnes)	0.227	0.413	0.896	1.156	0.562	0.544	0.526	0.748	0.440	0.782	6.30	0.63
Average price/tonne ($)	81.06	99.15	103.60	94.85	142.10	251.03	310.95	222.19	240.30	271.32		
Value $ millions	18.40	40.95	92.83	109.65	79.86	136.56	163.56	166.65	105.73	212.18	1,126.37	112.6

Source: Saskatchewan Department of Agriculture, *Agricultural Statistics*, 1976, 1977, 1978.

Table 4-15

Livestock marketing in Saskatchewan 1967-76

Year	Cattle	Calves	Sheep and lambs	Hogs	Cattle & calves	Sheep and lambs	Hogs
	Number in thousands				Value in $000's		
1967	669	306	43	598	165,921	805	30,958
1968	633	275	46	601	165,547	896	29,578
1969	543	222	31	554	134,781	937	36,426
1970	535	203	23	872	138,717	914	50,659
1971	555	229	29	1,255	176,750	926	51,117
1972	630	244	40	1,103	223,321	1,012	67,158
1973	583	233	37	1,086	268,768	1,214	98,242
1974	602	346	26	1,034	285,189	1,629	77,144
1975	745	222	19	1,617	311,581	1,961	64,782
1976	656	132	17	1,537	313,178	2,374	57,284

Source: Saskatchewan Bureau of Statistics, *Saskatchewan Economic Review*, No. 31, 1977, p. 28.

In 1931 the population of Saskatchewan was 921,785. The farm population of 564,012 accounted for 61 per cent of the total. By 1976 the population had decreased slightly to 921,323, and the farm population accounted for only 21 per cent or 193,068 people.

In 1976, there were 18,111 farm operators in the 45—54 year age group. The second largest age group (13,436 operators) was 35-44 years. Table 4-18 presents information about farm population, number of farms and age of farm operators in Saskatchewan.

As stated previously, there were 69,578 farms in Saskatchewan in 1976. Of this, 63,985 farms were operated by individuals, 2,233 by partnership, 284 by an institution or a community pasture, 2,993 as an incorporated business (family 2,597 and other 396), and 83 farms did not fit into any of the above categories. Table 4-19 classifies farms in Saskatchewan by tenure of operator from 1941 to 1976.

Table 4-20 shows the number of farms in Saskatchewan that reported producing crops, livestock or poultry for the years 1961, 1966, 1971 and 1976.

Table 4-16

Number and size of farms in Saskatchewan

Size of farms	Number of census farms*		
	1966	1971	1976
Under 3 acres	58	51	81
3 — 9 acres	104	114	144
10 — 69 acres	150	273	530
70 — 239 acres	2,436	1,783	6,206
240 — 399 acres	11,511	7,679	9,785
400 — 559 acres	12,778	10,139	9,262
560 — 759 acres	13,634	11,921	10,833
760 — 1,119 acres	15,435	15,011	14,627
1,120 — 1,599 acres	8,302	9,180	9,903
1,600 — 2,239 acres	3,421	4,153	4,752
2,240 — 2,879 acres	1,060	1,291	1,614
2,880 and over	1,073	1,335	1,841
Total	69,962	62,930	69,578
Average size (acres)	825	894	939

Source: Saskatchewan Bureau of Statistics, *Saskatchewan Economic Review*, No. 31, 1977, p. 24.

* **Census-farm**— agricultural holding of 1 acre or more with sales of agricultural products during the previous 12 months of $1,200 or more.

Table 4-17

Agricultural land use for the province of Saskatchewan (acres)

Year	Use of farm lands[1]								Total farm area
	Improved land					Unimproved land			
	Under crop	Improved pasture	Summerfallow	Other improved land	Total	Woodland	Other unimproved land	Total	
1966	26,574,902	1,870,097	15,639,256	617,906	44,702,161	1,233,192	18,085,862	19,319,054	64,021,215
1971	26,876,536	1,923,857	16,275,790	546,120	45,622,303	924,737	17,206,273	18,131,010	63,753,313
1976	26,166,700	2,225,875	17,733,533	566,823	46,692,931	1,005,945	17,617,578	18,623,523	65,316,454
Per cent change 1966-76	-1.5	16	13.9	-9	4.3	-22.5	-2.6	-3.7	2

1. Definitions of categories used:

Under crop — total area of field crops, fruits, vegetables, nursery and greenhouse products.

Improved pasture — area used for pasture and grazing with improvements made in recent years; i.e., seeding and/or fertilizing, weed and/or brush clearing and controlling, establishing drainage system and use of irrigation system.

Summerfallow — are not harvested but cultivated for weed control and/or moisture conservation. Are sown to a crop with intention of plowing under; green manure also included.

Other improved land — includes barnyards, home gardens, lanes and roads on farm lands as well as land once cultivated but not being pastured or summerfallowed. Areas of new breaking not yet cropped also included.

Woodland — areas include woodlots on farm lands, private lands leased from others for woodcutting and cutover land with seedlings or trees which have or will have value as timber, fuelwood or Christmas trees. Areas of trees planted for windbreaks also included.

Other unimproved land — areas include natural pasture or hay that had not been cultivated, brush pasture, grazing or wasteland, sloughs, marsh and rocky land, etc.

Source: Statistics Canada, *Agriculture Saskatchewan*, 1971 Census of Canada, Catalogue 96-709, Volume IV — Part 3, Ottawa, June 1973, p. 12-1.
Statistics Canada, *Agriculture Saskatchewan*, 1976 Census of Canada, Catalogue 96-808, Volume IV — Part 3, Ottawa, Feb. 1978, p. 3-1.

Table 4-18

Farm population, number of farms and age of farm operators in Saskatchewan, 1931 to 1976

Item	1931	1941	1951	1961	1966	1971	1976
Population							
Total population	921,785	895,992	831,728	925,181	955,344	926,242	921,323
Farm population	564,012	514,677	399,473	305,740	281,089	233,792	193,068
Percentage living on farms	61.2	57.4	48.0	33.0	29.4	25.2	21.0
Farms							
Number of farms	136,472	138,713	112,018	93,924	85,686	76,970	69,578
Non-resident farms	16,427	18,537	18,162	18,006	16,861	18,539	15,350
Farms classified by age of operator							
Operators reporting	119,835	121,054	111,586	93,924	85,686	76,970	69,578
Under 25 years	5,444	5,263	6,189	3,342	2,634	2,735	4,772
25 to 34 years	23,816	23,957	24,745	14,705	11,888	9,695	11,103
35 to 44 years			28,311	24,315	20,599	16,611	13,436
45 to 54 years	77,125	70,552	22,252	24,251	24,067	22,317	18,111
55 to 59 years			10,101	9,694	10,025	9,991	8,725
60 to 64 years	10,234	17,086	15,993	7,089	7,515	7,507	6,795
65 to 69 years				5,328	4,540	4,432	3,694
70 years and over	3,216	4,196	3,995	5,200	4,418	3,682	2,942

Source: Statistics Canada, *Agriculture Saskatchewan*, 1976 Census of Canada, Catalogue 96-808, Volume IV — Part 3, Ottawa, Feb. 1978, p. 2-1, 2-2 and 4-1.

Table 4-19

Saskatchewan farms classified by tenure of operators, 1941 to 1976

	1941		1951		1956		1961		1966		1971		1976	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Owner	72,954	52.6	61,157	54.6	54,218	52.4	48,374	51.5	47,471	55.4	41,499	53.9	36,612	52.6
Tenant	34,093	24.6	16,495	14.7	13,476	13.0	9,521	10.1	6,168	7.2	5,374	7.0	5,568	8.0
Part owner/ part tenant	32,028	22.4	33,760	30.2	35,034	33.9	35,687	38.0	31,641	36.9	30,097	39.1	27,398	39.3
Manager	638	0.4	606	0.5	663	0.7	342	0.4	406	0.5	N/A*		N/A*	
Total farms	138,713		112,018		103,391		93,924		85,686		76,970		69,578	

* In the 1971 and 1976 Census, land operated by a manager was classified as either owned or rented.

Source: Dominion Bureau of Statistics, *Agriculture Saskatchewan*, 1966 Census of Canada, Catalogue No. 96-609, Volume V(5-2), Ottawa, April 1968, p. 4-1.

Statistics Canada, *Agriculture Saskatchewan*, 1976 Census of Canada, Catalogue 96-808, Volume IV — Part 3, Ottawa, Feb. 1978, p. 13-1.

Table 4-20

Farms reporting crops, livestock and poultry in Saskatchewan, 1961 to 1976

Product	Number of farms reporting			
	1961	1966	1971	1976
Wheat (durum)	15,362	8,426	17,795	17,401
Wheat (spring sown)	85,948	78,724	61,317	60,852
Oats (for grain)	56,573	40,368	35,606	27,263
Barley	31,937	32,166	53,455	31,168
Mixed grain	3,028	2,969	3,272	1,895
Rye (fall sown)	2,659	4,147	6,260	3,357
Tame hay	25,834	26,207	23,538	25,131
Flaxseed	14,363	6,124	11,421	2,831
Rapeseed	7,023	10,195	23,981	8,022
Cattle	65,193	54,672	43,797	41,785
Milk cows	49,222	32,144	20,291	11,966
Pigs	40,693	26,987	25,040	12,114
Sheep	3,238	1,984	1,547	1,087
Horses	39,793	28,174	—	—
Chickens	54,338	39,573	29,719	23,862
Turkeys	15,529	8,922	5,638	5,261

Source: Statistics Canada, *Agriculture Saskatchewan*, 1971 Census of Canada, Catalogue 96-709, Volume IV — Part 3, Ottawa, June 1973, p. 10-1 and 11-1.

Statistics Canada, *Agriculture Saskatchewan*, 1976 Census of Canada, Catalogue 96-808, Volume IV — Part 3, Ottawa, Feb. 1978.

C. Forestry[2]

1. Legislation

Section 92 of *The British North America Act* (1867) gives each province exclusive jurisdiction over management and disposal of provincial public lands and the timber resources thereon. Table 4-21 lists the legislation affecting the use of forested land in Saskatchewan.

Table 4-21

Provincial and federal acts affecting the use of forested lands in Saskatchewan

Saskatchewan legislation
The Forest Act
The Provincial Lands Act
The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act
The Prairie and Forest Fires Act
The Department of Northern Saskatchewan Act
The Planning and Development Act
Federal legislation
The British North America Act

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[2] The material for this section was derived primarily from:

Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 108-118.

Saskatchewan Department of the Environment, *Saskatchewan Environmental Legislation*, Policy, Planning and Research Branch, November 1976, p. 63-68 and 151-152.

Saskatchewan Department of Tourism and Renewable Resources, *Saskatchewan's Forest Resources*, March 1974.

The Federal-Provincial Resources Transfer Agreement of 1930 gave Saskatchewan administrative control of Crown lands, including northern forest lands and various parcels of land in the south. Two Acts, *The Forest Act* and *The Provincial Lands Act*, were passed following the land resources transfer.

All matters relating to timber and conservation and preservation of forest lands in Saskatchewan are governed by *The Forest Act*, R.S.S. 1978, c.F-19. This Act provides for the establishment of provincial forests to:

(a) reserve areas in the province for the perpetual growth of timber;

(b) preserve forest cover on these areas; and

(c) provide for reasonable use of all resources contained in forest land.

The Act therefore provides for the care and management of provincial forests and for the protection and use of forest products on provincial lands.

Regulations made pursuant to *The Forest Act* govern the harvest of wood, use of forest lands for grazing purposes and their use for other purposes. Under this Act the province has the right to establish standards for forest utilization, to designate cutting areas, to establish rates for dues on forest products and to establish tariff fees for management licences, timber permits and sales.

In addition to *The Forest Act* and regulations, *The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act*, R.S.S. 1978, c.P-34, and *The Prairie and Forest Fires Act*, R.S.S. 1978, c.P.-22 provide for the preservation, detection and suppression of forest fires and the control of traffic on forest land. *The Provincial Lands Act*, R.S.S. 1978, c.P-31, provides for issuing of permits for use of unoccupied lands.

Amendments to *The Forest Act* in 1973 allowed for a change in the terms and conditions of forest management licences to provide for better use, thereby reducing the waste of the forest resource. The amendments contained provisions to ensure the future needs of the forest community by putting restrictions on harvesting methods, size of the area and species that could be harvested.

2. Provincial forests

Nine provincial forests are designated under *The Forest Act*. The total area of eight of these forests is approximately 2,207,600 acres. The ninth forest, the Northern Provincial Forest, covers the entire province north of 55 degrees latitude and occupies approximately 78,000,000 acres.

Until 1972 provincial forests were managed by the Forestry Branch of the Department of Natural Resources. The Department of Northern Saskatchewan, formed in 1972, has assumed responsibilities for local forestry development and forest management in the Northern Administration District (see Figure 3-1). The Department of Tourism and Renewable Resources continues to be responsible for forest inventory, silviculture, forest management agreements and liaison with industry. Table 4-22 summarizes information concerning provincial forests, and Figure 2-8 shows the location of each forest.

Utilization of the provincial forests is based on a multiple-use philosophy and controlled by the Forest Regulations. The most obvious forest use is extraction of wood materials and processing of these materials into marketable products. Virtually all exploration for metallic minerals in the province has taken place in the Northern Provincial Forest. In the Northern and Moose Mountain Provincial Forests, much oil and gas exploration has also been carried out. Hunting is permitted in provincial forests uder the provisions of *The Game Act*.

Parts of several provincial forests have been designated as provincial parks. The Cypress Hills, Moose Mountain, Duck Mountain, Greenwater, Nipawin, Lac La Ronge and Meadow Lake parks are all part of provincial forests. Management policy in the parks is oriented toward recreation; the use of the forest resources is to be carried out in a manner which does not impair the recreational experience for most park visitors.

Many other types of designated areas are also located in the provincial forests because of their physical attributes. Four wildlife management units are provincial forests. The Northern Forest alone contains five wildlife refuges and 15 provincial historic markers, as well as a number of other designated areas. Timber on these areas may be reserved from cutting under Section 45 of the Forest Regulations. If lands are leased to an organization, such as a regional park authority or a research organization, they are automatically excluded from forest management agreements.

3. Forest management areas

Forest management licences, granted under authority of *The Forest Act* and Regulations, give the incorporated company certain rights to timber in a designated forest management area. These rights include an annual timber volume allotment for a period of up to 20 years or for such further period of time as may be agreed upon in the licence agreement. Timber cutting in a forest management area is usually governed by a 10 year forest management plan which must be approved by both the Department of Tourism and Renewable Resources and the Department of Northern Saskatchewan.

Under the Forest Regulations, the Minister of Tourism and Renewable Resources and the Minister of Northern Saskatchewan may reserve areas from cutting within a forest management area for various reasons and purposes. In one of the forest management agreements negotiated to date, the amount reserved from cutting is limited to one-half of one per cent of the forest management area unless exchange areas can be negotiated. Amendments to *The Forest Act* in 1973 allowed for the increase of areas reserved from cutting in any forest management area.

Of the eight forest management licences now issued in the province, six are in the Northern Provincial Forest and two are partly in the Northern Provincial Forest and partly in the Porcupine Forest (Table 4-23).

Virtually all of Saskatchewan's commercial forest zone is under Forest Management Licence Agreement. Areas of exception are: Meadow Lake Provincial Park (379,680 acres); Primrose Lake Air Weapons Range (1,575,735 acres); Nisbet Provincial Forest (203,706 acres); Fort a la Corne Provincial Forest (322,688 acres); Canwood Provincial Forest (12,320 acres); Torch River Provincial Forest (9,920 acres); Nipawin Provincial Park (161,280 acres); La Ronge Provincial Park (381,440 acres); Cypress Hills Provincial Forest (45,043 acres); La Ronge Public Working Circle (30,720 acres); and Moose Mountain Provincial Forest (97,414 acres).

Table 4-22

Provincial forests

Name	Date established	General location	Area (acres)	Habitat type[1]	Forest management licences	Other designations
Canwood	1931	50-4-W3	12,320	4	none	
Cypress Hills	1931	8-29-W3 (West Block) 8-26-W3 (Centre Block)	43,043	2 & 3	none	Contains a provincial park, a research and teaching area and part of a national historic park.
Duck Mountain	1931	30-30-W1	58,572	4	none	Contains both a provincial park and provincial historic marker.
Fort a la Corne	1931	50-19-W2	322,688	3	none	Contains both a wildlife management unit and a provincial historic marker.
Moose Mountain	1931	10-4-W2	97,414	3	none	Contains both a provincial park and a provincial historic marker.
Nisbet	1931	47-2-W3	203,705	3	none	Contains a recreation site, a provincial historic marker and part of a wildlife management unit.
Northern	1931[2]	entire north of province	78,000,000[3]	4 & 5	8	Contains 5 wildlife refuges, 2 protected areas, 1 wildlife management unit, 7 recreation sites, 2 national historic sites, 1 national historic park, 1 national park, 3 provincial parks, 15 provincial historic sites and a research and teaching area.
Porcupine	1931	40-4-W2	1,459,929	4	2	Contains a wildlife management unit and an association community pasture, 2 provincial historic markers, a national historic site, 4 recreation sites and part of a provincial park.
Torch River	1931	53-15-W2	9,920	3	none	

[1] Key to Habitat Type —
1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest
5. Northern Coniferous Forest

[2] The Northern Provincial Forest is a consolidation of several provincial forests established in 1931.

[3] Estimate.

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January, 1976, p. 113.

Personal communication, Forestry Branch, 1979.

Two provincial parks, Nipawin and Lac La Ronge, are within the Prince Albert Pulp Company Limited forest management area. These parks are not included in the management licence and are therefore excluded from harvesting by the company. Limited harvesting operations may be permitted in the parks, however, and cutting by small private contractors occurs within Nipawin Provincial Park.

Table 4-23

Forest management areas in Saskatchewan

Licensee	Provincial forest
Domtar Chemicals Ltd., Canada: Creosoting Division	Northern
Domtar Construction Materials Ltd.	Northern
L & M Wood Products Ltd.	Northern
MacMillan Bloedel Ltd.	Northern & Porcupine
Meadow Lake Sawmill Company Ltd.	Northern
Northern Wood Preservers (Saskatchewan) Ltd.	Northern
Prince Albert Pulp Company	Northern
Simpson Timber Company	Northern & Porcupine

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 116.

Personal communication, 1979.

4. Forest products

In 1976 provincial Crown lands provided 90 per cent of the annual cut from the forests of Saskatchewan. During 1976-77 production included: 1,334,073 cubic metres of wood for the particle board, fibre board and Kraft pulp industry; 4,293,000 posts; 36,013 metres of piling and round lumber, 939,373 cubic metres of saw timber; and 213,000 rails. Compared to 1973-74 these figures represent production increases of three per cent in particle board, fibre board and Kraft pulp, 105 per cent in piling-round lumber, and 16 per cent in saw timber. However, there were decreases of seven per cent and 19 per cent in the production of ties and poles respectively. Table 4-24 presents additional information on forest production in Saskatchewan from 1973 to 1977.

5. Economic value

The value of forest products in Saskatchewan totalled more than 122 million dollars in 1976, 103.5 million dollars in 1975 and 110.5 million dollars in 1974 (Table 4-24).

Direct revenue to the province from the forest amounted to 2.2 million dollars in 1976 and 2.4 million dollars in 1975. By comparison, revenue to the province from the forest in 1967-68 amounted to $820,000. Table 4-25 presents information on forest revenue to the province for 1975-76 and 1976-77.

6. Employment in the Saskatchewan forest industry

In 1976 the forest industry consisted of 220 sawmills, six wood preserving plants, one pulp mill, one plywood mill and one particle board producer. This industry provided direct employment for approximately 4,096 people. Table 4-26 presents information on sawmills and employment in Saskatchewan for the years 1970 to 1977.

Table 4-24

Saskatchewan forest production and value

Product	Number of units and total value								
	Unit*	1973-74		1974-75		1975-76		1976-77	
Saw timber	cubic metres	787,635	$23,780,240	587,696	$15,315,437	538,387	$13,868,284	939,373	$21,942,429
Ties	pieces	23,557	143,462	24,104	361,560	50,448	272,635	21,887	133,511
Piling and round timber	metres	17,496	783,487	23,617	119,325	38,753	311,502	36,943	218,169
Posts	pieces	4,119,055	3,130,482	4,806,607	7,450,240	5,292,785	8,680,167	4,293,879	6,555,512
Rails	pieces	142,787	107,090	324,810	406,012	238,406	291,757	213,200	4,165,063
Fuel wood	cubic metres	5,337	55,850	9,081	113,190	9,125	121,312	13,019	162,270
Pulp wood (export)	cubic metres	27,535	206,950	—	—	—	—	—	—
Poles	pieces	49,282	965,927	26,470	582,340	60,722	1,691,715	40,111	1,517,800
Particle board, fibre board and Kraft pulp	cubic metres	1,296,792	45,795,790	1,669,532	86,163,339	1,259,111	78,266,721	1,334,073	87,773,089
Small trees	pieces	6,884	13,768	121,966	23,932	—	15,585	5,650	16,950
Totals			$74,683,046		$110,535,375		$103,519,678		$122,483,793

* Converted to SI Units by Forestry Branch, January 1980.

Sources: Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1974, p. 43.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1975, p. 30.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1976, Table No. 15

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1977, p. 28.

Table 4-25

Forest revenue from provincial forests and provincial lands 1975-76 and 1976-77

	1975-76	1976-77
Dues, fees and royalties:		
Pulpwood — licence areas:		
— Prince Albert Pulpwood Limited	$108,672.86	$185,214.00
— Other	25,218.85	176,982.30
Pulpwood — non-licence areas:		
— Prince Albert Pulpwood Limited	7,298.27	15,591.47
— Saskatchewan Forests Products Corporation	26,645.51	30,782.19
— Other	487.37	3,399.38
Saw timber — licence areas:		
— Meadow Lake Sawmill	47,537.04	84,435.34
— Simpson Timber Company	563,106.50	921,005.25
— Other	2,493.45	17,852.32
Saw timber — non-licence areas:		
— Meadow Lake Sawmill	177.65	132.07
— Saskatchewan Forest Products Corp.	123,536.94	18,404.10
— Simpson Timber Company	27,370.00	29,405.84
— Other	37,754.50	36,502.45
Other products — licence areas:		
— Meadow Lake Sawmill	—	18,052.99
— MacMillan Bloedel	89,397.30	119,775.93
— Domtar Chemicals	9,873.14	4,517.13
— L & M Wood Products	37,674.55	27,201.00
— Other	1,146.88	—
Other products — non-licence areas:		
— Saskatchewan Forest Products Corp.	881,878.70	254,172.30
— MacMillan Bloedel	1,097.32	2,768.43
— L & M Wood Products	5,845.61	595.33
— Domtar Chemicals Limited	5,872.69	—
— Other	84,003.07	73,177.81
Regeneration fees — licence areas:		
— Meadow Lake Sawmill	4,932.94	23,045.05
Total	$2,092,021.14	$2,043,012.68
Licences and permits:		
Saw mill	$2,337.00	$2,266.50
Licences — operating:		
— Forest management licence agreement	127,227.01	700.00
— Forest production treating plant	115.94	30.00
— Wild rice term	40.00	10.00
— Other	84.50	134.00
Grazing	71,538.07	66,481.98
Hay	9,128.69	10,658.54
Overcut hay	1,608.70	463.38
Timber, with dues	19,905.17	5,167.98
Timber, free of dues	32.00	353.88
Other	14.44	82.00
Wild rice	1,665.80	4,141.60
Total	$233,697.52	$90,489.86
Penalties and interest:		
Waste of merchantable timber	$2,479.94	$6,318.04
Overcut timber	3,945.87	2,936.66
Timber seizure sales	34.45	33.75
Overcut hay dues	16.00	353.00
Other	3,018.78	5,034.33
Total	$9,495.04	$4,675.78
Sales and services:		
Timber	$47.50	$30.00
Other	374.50	117.94
Total	$422.00	$147.94
Other:		
Fire prevention levy:		
— MacMillan Bloedel	$21,429.08	$20,195.84
— Domtar Chemicals	595.20	595.20
— L & M Wood Products	—	10,132.96
— Simpson Timber Company	1,246.10	—
Ground rental:		
— MacMillan Bloedel	$4,733.40	$10,494.67
— Domtar Chemicals	155.00	155.00
— L & M Wood Products	—	2,638.80
— Simpson Timber Company	2,920.57	—
Total	$31,079.35	$44,212.49
Miscellaneous	$85.00	—
Total revenue	$2,366,800.05	$2,192,538.75

Sources: Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1976 and 1977

Table 4-26

Sawmills and employees in forest-based industries

Year	Number of sawmills	Number of employees			
		At sawmills	In woods	Others	Total
1970	277	1,087	957	593	2,637
1971-72	313	1,335	1,134	1,213	3,682
1972-73	262	1,192	1,111	11,184	3,487
1973-74	325	1 506	1,222	852	3,580
1974-75	339	1,344	1,059	1,199	3,602
1975-76	351	1,593	958	1,101	3,652
1976-77	220	1,609	1,344	1,143	4,096

Sources: Saskatchewan Department of Natural Resources, *Annual Reports*, 1971-1973.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Reports*, 1974-1977.

Table 4-27

Legislation relevant to wildlife in Saskatchewan

Saskatchewan legislation

The Wildlife Act

The Northern Saskatchewan Conservation Board Act

The Planning and Development Act

The Provincial Lands Act

Federal legislation

Migratory Birds Convention Act

Canada Wildlife Act

D. WILDLIFE[3]

1. Legislation

Legislation dealing with wildlife has usually been administered by the provincial government under Section 92 of *The British North America Act*, which authorizes the province's jurisdiction over all matters of a merely local or private nature in the province. The 1930 Natural Resources Transfer Agreement gave the province jurisdiction over all wildlife except migratory birds. Wildlife has been administered by the Department of Tourism and Renewable Resources and the Department of Northern Saskatchewan.

Two Saskatchewan statutes and two federal acts are outlined in this report (see Table 4-27).

i) Saskatchewan legislation

The Wildlife Act, S.S. 1979, c. W13-1 is administered by the Department of Tourism and Renewable Resources and the Department of Northern Saskatchewan. This Act repealed *The Fur Act, The Game Act* and *The Wolf and Coyote Bounty Act*. Under *The Wildlife Act*, property in all wildlife is vested in the Crown. This Act regulates harvest of, possession of, and export and import of all wildlife including game and fur animals.

The Act enables making of regulations and orders to:

(a) prescribe species of wildlife to be protected and the management and control of such wildlife and any products thereof;

(b) protect, manage, regulate any wildlife or habitat;

(c) designate any area of the province as an area to protect, propogate, perpetuate, manage, harvest, control, or regulate wildlife or its habitat; and

(d) control and protect any of these designated areas and the wildlife therein and regulate hunters, trappers, and other persons therein.

The Northern Saskatchewan Conservation Board Act, R.S.S. 1978, c.N-6 is administered by the Department of Northern Saskatchewan and allows application of *The Wildlife Act* in the Northern Administration District. The Act also establishes the Northern Saskatchewan Conservation Board. This Board advises the governments of Canada and Saskatchewan with respect to game, fish and fur resources of northern Saskatchewan and the sufficiency of such resources for the sustenance and well-being of the population of that area, as well as policies that might be adopted to increase these resources. The Board may make recommendations regarding establishment of preserves for game, fish and fur animals.

ii) Federal legislation

The Migratory Birds Convention Act, R.S.C. 1970, c.179 allows the Governor-General in Council to make regulations prohibiting killing, capturing, taking, injuring or molesting migratory game, migratory insectivorous or migratory non-game birds (or the taking, injuring, destruction or molestation of their nests or eggs) within any prescribed area, as well as regulations for the control and management of such an area. In addition, the Act and its regulations provide for a controlled harvest of specified migratory birds.

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[3] The material for this section was derived primarily from:

Saskatchewan Department of Tourism and Renewable Resources, *1977 Hunter and Game Population Surveys*, Fisheries and Wildlife Branch, 1977.

Carlyle Ross, *Economic Evaluation of Resident Big Game Hunting in Saskatchewan*, Research Report No. 1, Saskatchewan Department of Tourism and Renewable Resources: Research, Planning and Policy Branch, 1975.

Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 9-36.

Saskatchewan Department of the Environment, *Saskatchewan Environmental Legislation*, Policy, Planning and Research Branch, November 1976, p. 80-87 and 156-157.

Saskatchewan Department of Natural Resources, *Annual Reports*, 1968-1973.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Reports*, 1974-77.

The Canada Wildlife Act, S.C. 1973, c.133 is administered by the federal Minister of the Environment. Under this Act the Governor-General in Council may assign the management and control of public lands required for wildlife research, conservation or interpretation to the Minister of the Environment. The Act provides for measures to be taken to protect endangered wildlife and to acquire land for the purposes of research, conservation and interpretation of migratory birds or other wildlife.

2. Game management zones

Saskatchewan is divided into a number of game management zones, primarily in order to regulate hunting according to regional habitat and game population differences. Figure 4-4 shows the 37 game management zones of the province. They are grouped into five "land use" divisions, namely, Grassland, Farmland, Parkland, Commercial Forest and Shield. The rationale for the division of the province into these zones is listed below:

i) Areas with ecological or land use similarities support similar densities and diversities of wildlife species. Because common limitations for wildlife populations exist in such areas, they have been grouped together in zones.

ii) Most wildlife species in Saskatchewan are dependent on critical winter habitat. Many zones shown in Figure 4-4 reflect an intent to manage key wintering areas intensively. This is particularly true in the three southern divisions.

iii) River valleys often contain unique or critical habitat for game. Whenever possible, therefore, river valleys have been included in one zone.

iv) An important part of wildlife management is regulation of hunter pressure and harvest. Special zones have therefore been established around major urban centres.

v) Easily recognizable boundaries should be used to divide zones at all times in order to aid hunters.

Descriptions of the five divisional zones are given below:

The Grassland Division — has been designed primarily for antelope and mule deer management. The zones reflect the international and interprovincial migratory behaviour of antelope and facilitate separate management of local wintoring herds as well as migratory animals. Zones previously needed for mule deer management have been retained. The grassland division also provides sufficient flexibility for upland bird and waterfowl management.

The Farmland Division — is characterized by small islands of natural habitat surrounded by large areas of agriculture. Almost all wildlife depends on these island type situations for winter cover. Wildlife management in this area centres on wise use of these wintering areas. Upland bird and waterfowl management needs have been considered in several zones, especially in the Kindersley and Quill Lakes area. Also incorporated into the Farmland Division are two city zones, Zone 9 around Moose Jaw and Regina and Zone 13 around Saskatoon. Both zones allow for various management techniques to regulate hunter numbers and pressure for both upland birds and big game.

The Parkland Division — primarily reflects the needs of white-tailed deer management. Although farming is common in this division, substantial areas of aspen bluffs exist to provide winter habitat for wildlife over a large portion of the area. The northern boundary of this division can be used to delineate north-south differences between waterfowl and upland bird management.

The Commercial Forest Division — consists primarily of zones to manage moose, deer and elk.

The Shield Division — attempts to accommodate some of the hunter and wildlife distribution problems experienced in northern Saskatchewan.

3. Designated widlife lands

i) Federal bird sanctuaries

Fifteen federal bird sanctuaries, over 156,000 acres in area, have been established in Saskatchewan under *The Migratory Birds Convention Act*. The areas are managed by the Canadian Wildlife Service of the federal Department of the Environment. Information about the sanctuaries is presented in Table 4-28; distribution of the sanctuaries is shown in Figure 4-5.

The federal bird sanctuaries in Saskatchewan are mainly water areas. The main purpose of most sanctuaries is protection of migratory birds in their fall staging areas. The designation of water areas only has created some problems of crop depredation on adjacent land areas. A partial solution to this problem is sowing lure crops near the sanctuaries to act as buffer zones between the sanctuary and grain crops. This practice is carried out on lands adjacent to the Last Mountain Lake Federal Bird Sanctuary, for example.

Parts of four sanctuaries (Neely, Scentgrass, Upper Rousay and Wascana Lakes) are also designated as provincial game preserves. In Old Wives and Redberry Lake Sanctuaries two islands have been declared provincial wildlife refuges, named Isle of Bays and Redberry respectively. Val Marie Reservoir Sanctuary is located completely within a PFRA community pasture.

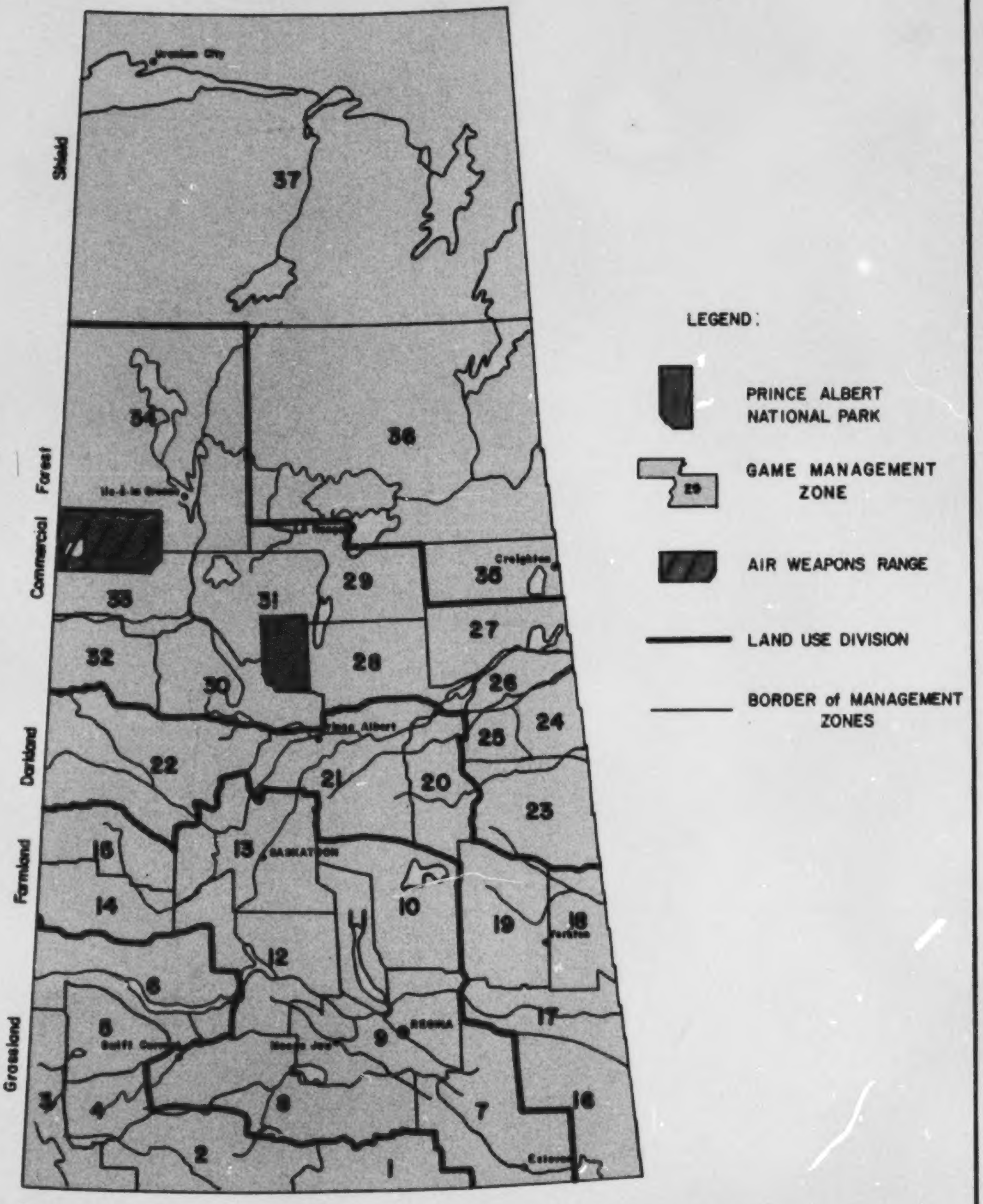
The reason for the double designations is that the federal bird sanctuaries provide protection for migratory birds, their nests and eggs, while provincial areas protect all birds and animals.

ii) Provincial wildlife areas

Three types of areas, first designated under *The Game Act* and now regulated under *The Wildlife Act*, are game preserves, wildlife management units and wildlife refuges. Each of these types is discussed below.

(a) Game preserves

Some preserves existed in Saskatchewan before 1930, when control of natural resources was transferred to the province from Canada. In 1962, all existing game preserves were dissolved and new game preserves were established by Order-in-Council 205/62. This process was basically an updating of the legal descriptions of the game preserves. Several game preserves were established after 1962, and by 1972 there were approximately 130 game preserves in the province.


Uranium City
Shield
37
Forest
Commercial
34
36
Ile-à-la Crosse
La Ronge
Creighton
29
35
33
31
27
32
28
30
26
Prince Albert
24
25
Darkland
22
21
20
23
Farmland
15
13
Saskatoon
14
10
19
18
Yorkton
12
6
17
5
Regina
9
Swift Current
Moose Jaw
Grassland
3
4
8
7
16
2
1
Estevan
LEGEND:
PRINCE ALBERT NATIONAL PARK
29
GAME MANAGEMENT ZONE
AIR WEAPONS RANGE
LAND USE DIVISION
BORDER of MANAGEMENT ZONES

SOURCE: Carlyle Ross, Economic Evaluation of Resident Big Game Hunting in Saskatchewan Research Report No.1, Saskatchewan Department of Tourism & Natural Resources, Research, Planning and Policy Branch, 1975, p. 16.

SASKATCHEWAN **DEPARTMENT OF THE ENVIRONMENT** POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN **GAME MANAGEMENT ZONES** IN **SASKATCHEWAN**	FIGURE 4 - 4

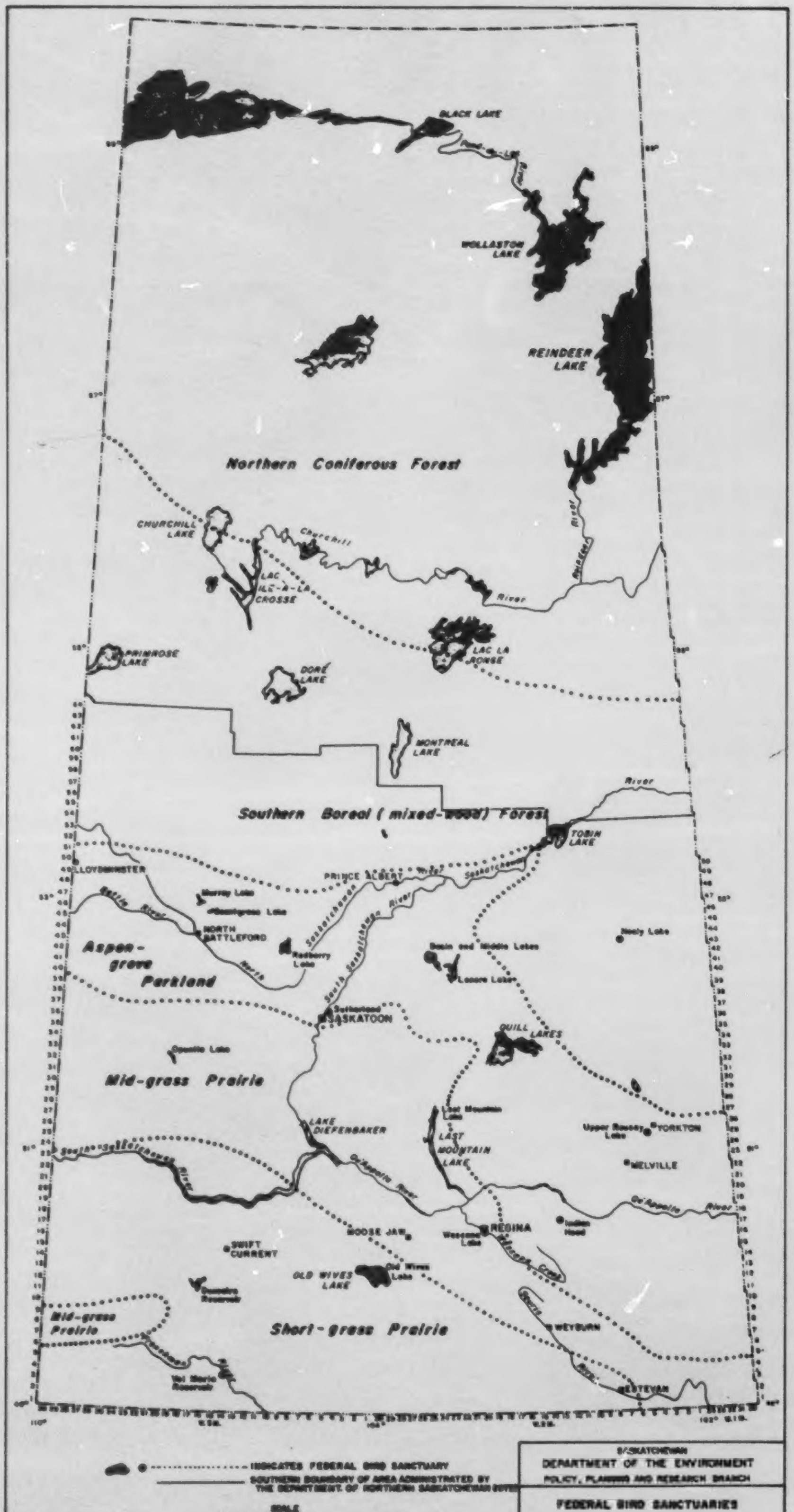
801 107

Table 4-28
Federal bird sanctuaries

Name	Order-in-Council number	Date est.	General location (sec.-twp.-rge.-mer.)	Area (acres)	Land ownership	Habitat type[1]	Purpose of designation	Other designations
Basin and Middle Lakes	P.C. 1925/345	1925	42-23-W2	21,546	Crown	3	Protect waterfowl	
Duncairn Reservoir	N/A	1948	12-16-W3	3,854	Crown	1	Protect waterfowl	
Indian Head	P.C. 1924/732	1924	SW 11-18-13-W2	80	Crown	3	Protect tree nursery	
Last Mountain Lake	P.C. 1887/1181	1887	27-24-W2	11,840	Crown	2	Protect waterfowl, marsh and colonial species	
Lenore Lake	P.C. 1925/345	1925	41-21-W2	21,800	Crown	3	Protect waterfowl, pelicans and other shorebirds	
Murray Lake	N/A	1948	47-21-W2	2,880	Crown	3	Protect waterfowl	
Neely Lake	N/A	1950	43-6-W2	2,000	Crown	4	Protect waterfowl	Within a provincial game preserve and adjacent to an association pasture
Old Wives Lake	P.C. 1925/345	1925	13-29-W2	64,400	Crown	1	Protect waterfowl and colonial species	Contains a wildlife refuge
Opuntia Lake	N/A	1950	33-19-W3	3,450	Crown	2	Protect waterfowl	
Redberry Lake	P.C. 1925/345	1925	43-6-W3	15,800	Crown	3	Protect waterfowl and colonial species	Contains a wildlife refuge
Scentgrass Lake	N/A	1948	46-15-W3	1,564	Crown	3	Protect waterfowl	Within a provincial game preserve
Sutherland	P.C. 1924/732	1924	SE 12-37-5-W3 NE 1-37-5-W3	320	City of Saskatoon	3	Protect city park	
Upper Rousay Lake	N/A	1948	25-4-W2	5,000	Crown	3	Protect waterfowl	Part of a provincial game preserve
Val Marie Reservoir	N/A	1948	4-14-W3	1,250	Crown	1	Protect waterfowl	Within a PFRA community pasture
Wascana Lake	N/A	1956	8-17-19-W2	320	Wascana Centre, Regina	2	Protect Canada geese	Part of a provincial game preserve

[1] Key to major Habitat Types:
1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 12.


BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Reindeer River
Northern Coniferous Forest
CHURCHILL LAKE
Churchill River
LAC ILE-A-LA CROSSE
PRIMROSE LAKE
DORÉ LAKE
LAC LA RONGE
MONTREAL LAKE
Southern Boreal (mixed-wood) Forest
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
Saskatchewan River
Murray Lake
Beaver River
NORTH BATTLEFORD
Redberry Lake
Aspen-grove Parkland
North Saskatchewan River
South Saskatchewan River
Basin and Middle Lakes
Lenore Lake
Neely Lake
SASKATOON
QUILL LAKES
Mid-grass Prairie
LAKE DIEFENBAKER
Last Mountain Lake
LAST MOUNTAIN LAKE
Upper Rousay Lake
YORKTON
MELVILLE
Qu'Appelle River
REGINA
Indian Head
MOOSE JAW
SWIFT CURRENT
OLD WIVES LAKE
Old Wives Lake
Wascana Creek
Souris River
WEYBURN
ESTEVAN
Val Marie Reservoir
Short-grass Prairie
Mid-grass Prairie
110°
106°
102° W.1.M.
60°
57°
55°
53°
51°
49°
INDICATES FEDERAL BIRD SANCTUARY
SOUTHERN BOUNDARY OF AREA ADMINISTRATED BY THE DEPARTMENT OF NORTHERN SASKATCHEWAN
SCALE
KILOMETRES
MILES

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

FEDERAL BIRD SANCTUARIES
IN
SASKATCHEWAN

FIGURE 4-5

Table 4-29

Game preserves in Saskatchewan

Name	Order-in-Council Number	Date established	General location (Sec.-Twp.-Rge.-Mer.)	Area (Acres)	Land ownership	Habitat type[1]	Purpose of designation	Other designations
Andrews Lake	205/62	1962	12-23-W3	2,560	Patented	1	waterfowl protection	Within an association community pasture
Berube Lake	205/62	1953	57-7-W3	3,840	Crown	4	waterfowl protection	
Blaine Lake	1190/65	1957	43-6-W3	902	Patented	3	protect private buffalo herd	
Boggy Creek	205/62	1962	18-19-W2	2,080	Patented	2	protect private property	
Charron Lake	205/62	1953	39-16-W2	1,312	Crown	3	waterfowl protection	Contains a regional park
Crystal Beach	1677/63	1948	31-12-W3	19,200	Crown and Patented	2	deer protection	Contains a recreation site & a regional park
Daloe	1587/66	1956	32-18-W2	2,144	Crown	3	waterfowl protection	
Estevan Park	205/62	1962	2-8-W2	1,440	Patented	1	protect private property	Contains a regional park
Great Bend	1127/75	1949	39-9-W[illegible]	9,600	Patented and Crown	3	deer protection	
Kendal	205/62	1958	14-12-W2	1,786	Crown	3	waterfowl protection	
Little Manitou	205/62	1962	3, 10-32-25-W2	210	Patented	2	protect private property	Part of a regional park
McLaren Lake	205/62	1953	15-29-W3	2,182	Patented	1	waterfowl protection	Part of a regional park
Macklin	205/62	1962	39-28-W3	1,120	Patented	2	protect private property	Contains a regional park
Marsden	205/62	1953	44-27-W3	1,920	Patented	3	waterfowl protection	
Melville	205/62	1962	23-6-W2	3,322	Patented	3	upland game bird protection	
Moose Jaw	205/62	1933	16-26-W2	1,600	Patented	2	protect private property	Contains both a regional park and a provincial historic marker
Neely Lake	205/62	1962	43-6-W2	1,587	Crown	4	waterfowl protection	Contains a federal bird sanctuary and part of an assoc. community pasture
Outlook	205/62	1962	30-8-W3	9,370	Patented	2	waterfowl protection	
Patterson Lake	205/62	1962	30-30-5-W2 25-30-6-W2	360	Patented	4	waterfowl protection	
Radisson Lake	205/62	1951	40-10-W3	1,709	Crown	3	waterfowl protection	
St. Peter	205/62	1962	37-21-W2	3,840	Patented	3	deer protection	
Saltcoats	205/62	1948	24-2-W2	1,040	Patented	3	waterfowl protection	
Scentgrass Lake	205/62	1962	46-15-W3	3,360	Patented	3	waterfowl protection	Contains a federal bird sanctuary
Upper Rousay	205/62	1962	25-5-W2	1,280	Patented	3	waterfowl protection	Partly a federal bird sanctuary
Valeport	205/62	1962	20-21-W2	640	Crown	2	waterfowl protection	PFRA community pasture
Wascana	205/62	1962	17-19-W2	2,800	Patented and Crown	2	waterfowl protection	Contains a federal bird sanctuary
Willow Bunch	205/62	1962	6-27-W2	3,268	Crown	1	deer protection	Association community pasture
Wood Mountain	205/62	1962	4-3-W3	9,600	Patented	1	pheasant protection	

[1] Key to Major Habitat Type —

1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 21.
Personal communication.

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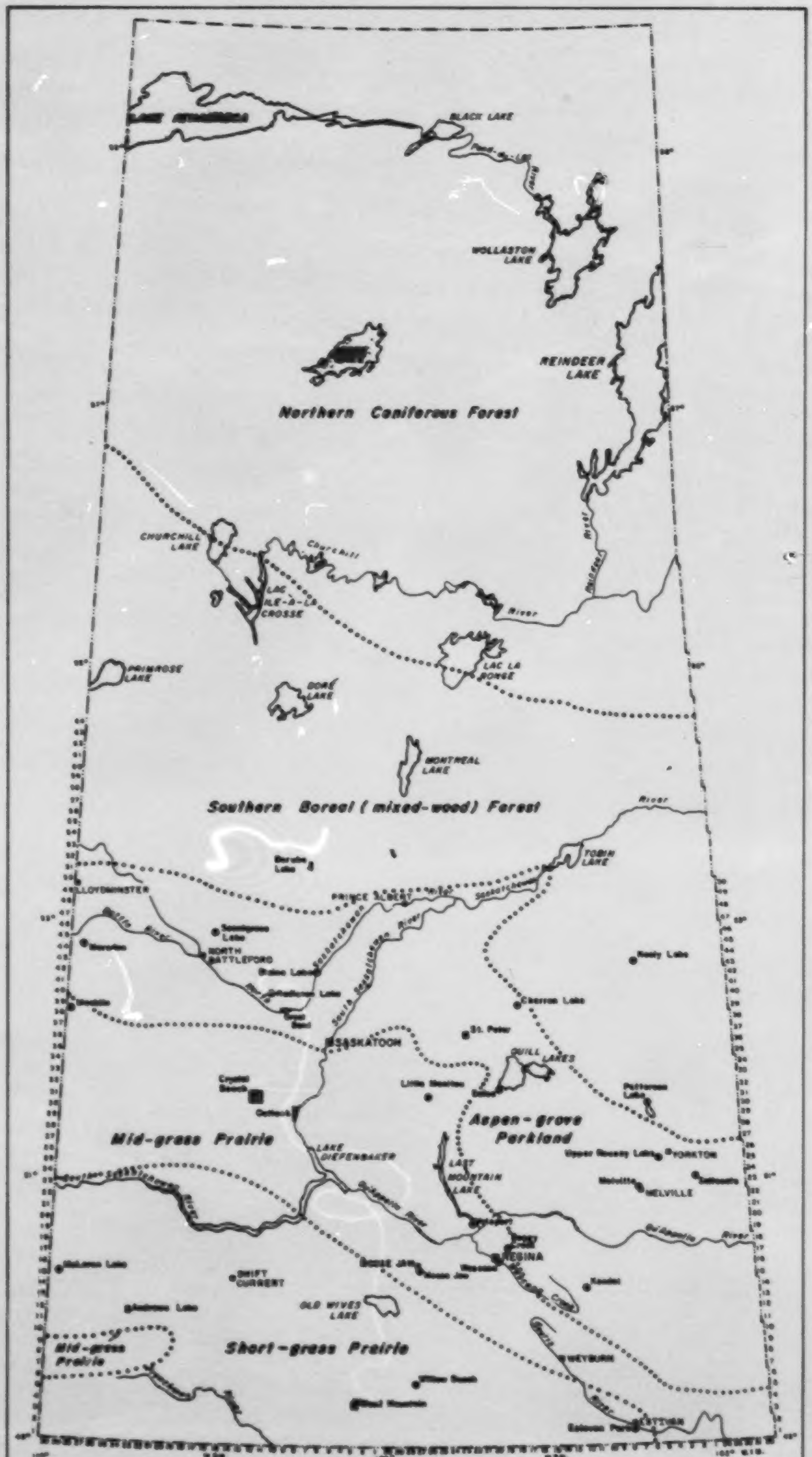
LAKE ATHABASCA
BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill
LAC ILE-À-LA CROSSE
River
PRIMROSE LAKE
DORÉ LAKE
LAC LA RONGE
MONTREAL LAKE
Southern Boreal (mixed-wood) Forest
River
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
NORTH BATTLEFORD
Battle River
North Saskatchewan River
South Saskatchewan River
SASKATOON
St. Peter
QUILL LAKES
Crystal Beach
Little Manitou
Aspen-grove Parkland
Mid-grass Prairie
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
Upper Rousay Lake
YORKTON
Melville
MELVILLE
Qu'Appelle River
REGINA
Moose Jaw
SWIFT CURRENT
OLD WIVES LAKE
Short-grass Prairie
Mid-grass Prairie
WEYBURN
Souris River
ESTEVAN
Estevan Park

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

GAME PRESERVES
IN
SASKATCHEWAN

FIGURE 4-6

INDICATES GAME PRESERVE
SCALE
KILOMETRES
MILES

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In 1970 it was recognized that the game preserve designation was inadequate in Saskatchewan. The term "game preserves" was replaced by more descriptive titles, namely "wildlife management units" and "wildlife refuges". Since 1970, many game preserves have received these new designations, while others have lost their designated area status completely. In 1978 there were 29 game preserves left, occupying approximately 98,070 acres.

Information on game preserves that exist at the present time is given in Table 4-29, and their locations are shown in Figure 4-6.

Many game preserves were designated to protect property from damage caused by careless hunters. For many years all PFRA community pastures were designated as game preserves in order to protect livestock and property. Other game preserves were established primarily to protect summer cottages (Little Manitou Game Preserve), mental patients (Battleford, deleted by Saskatchewan Regulation 105/69 O.C. 746/69, May, 1969), golf courses (Boggy Creek), and privately-owned buffalo herds (Blaine Lake). Many of these areas were of little or no value as bona fide game preserves.

Most game preserves in the province are located on private land, and the Department of Tourism and Renewable Resources exercises no control over land use. As a result, mismanagement often occurs and many game preserves do not serve the purpose of wildlife management, protection or propagation.

Fourteen game preserves are associated with other designations. Neely Lake, Scentgrass, Upper Rousay Lake and Wascana Lake contain federal bird sanctuaries which were established to prohibit hunting near the water's edge.

Neely Lake and Andrews Lake are part of association community pastures, and Wood Mountain is basically coterminous with an association community pasture. Six game preserves (Charron Lake, Estevan Park, Little Manitou, McLaren Lake, Macklin and Moose Jaw) are associated with regional parks, while another (Crystal Beach) contains a recreation site. Moose Jaw Game Preserve also contains a provincial historic marker.

(b) Wildlife management units

Wildlife management units were first established in Saskatchewan in 1970. In 1978 there were 19 units with a total area of about two million acres. Additional information about the wildlife management units is given in Table 4-30 and their locations are shown in Figure 4-7.

The main reason for introduction of the wildlife management unit was the lack of a consistent policy for wildlife management in game preserves. As the name implies, the units were designated for wildlife management purposes. In most units, management consists mainly of hunting restrictions which depend upon the population of species in the unit in any particular year. Habitat manipulation has been achieved by Ducks Unlimited, Canadian Wildlife Service and the Department of Tourism and Renewable Resources by building structures to maintain water levels in marsh areas at the Last Mountain Lake Wildlife Management Unit.

As on game preserves, management of land use is a problem in wildlife management units because the Department of Tourism and Renewable Resources has no control over land use in most of the areas.

Thirteen wildlife management units are PFRA community pastures in the short and mid-grass prairie regions of the province. The value of these pastures for wildlife habitat varies from excellent to poor.

Four units (Buckland, Fort a la Corne, Pasquia, and Porcupine) are within provincial forests. Pasquia and Porcupine were established when it became evident that moose hunting was causing a serious depletion of moose populations in these areas. These areas were also designated as game preserves at one time.

The general policy of the Department of Tourism and Renewable Resources is not to designate private lands as wildlife management units; problems could arise if people living within the boundaries of such areas were prohibited from possessing or using firearms on their own property.

Various other designations are associated with wildlife management units. The Buckland unit contains a recreation site. Last Mountain Lake contains a regional park and a provincial historic marker and is partly designated as a federal bird sanctuary. The Fort a la Corne unit contains a provincial historic marker and Pasquia contains two protected areas.

(c) Wildlife refuges

Wildlife refuges have only recently been established in the province. The first seven were designated in August, 1970. There are now 15 designated wildlife refuges, comprising about 6,000 acres. Additional information about wildlife refuges is given in Table 4-31, and the locations of the refuges are shown in Figure 4-8.

The main reason for establishing the wildlife refuge designation was failure of game preserves to consistently protect wildlife. Wildlife refuges are managed to protect wildlife from man's activities; hunting and shooting are banned on them. This protection of habitat necessary for wildlife is not difficult, as the Department of Tourism and Renewable Resources administers the land on all but one refuge. Most refuges are fewer than 200 acres in area, and many are relatively inaccessible (seven are located on islands); there is therefore little disturbance of the habitat.

Established wildlife refuges protect important wildlife habitats, such as areas supporting prairie dog colonies, Canada geese, double-crested cormorants, white pelicans and blue herons, areas used for habitat research purposes, and areas with an abundance of wildlife. Backes Island, Gatehouse Island, Rock Island and Scheelhaase Island are all within a provincial forest.

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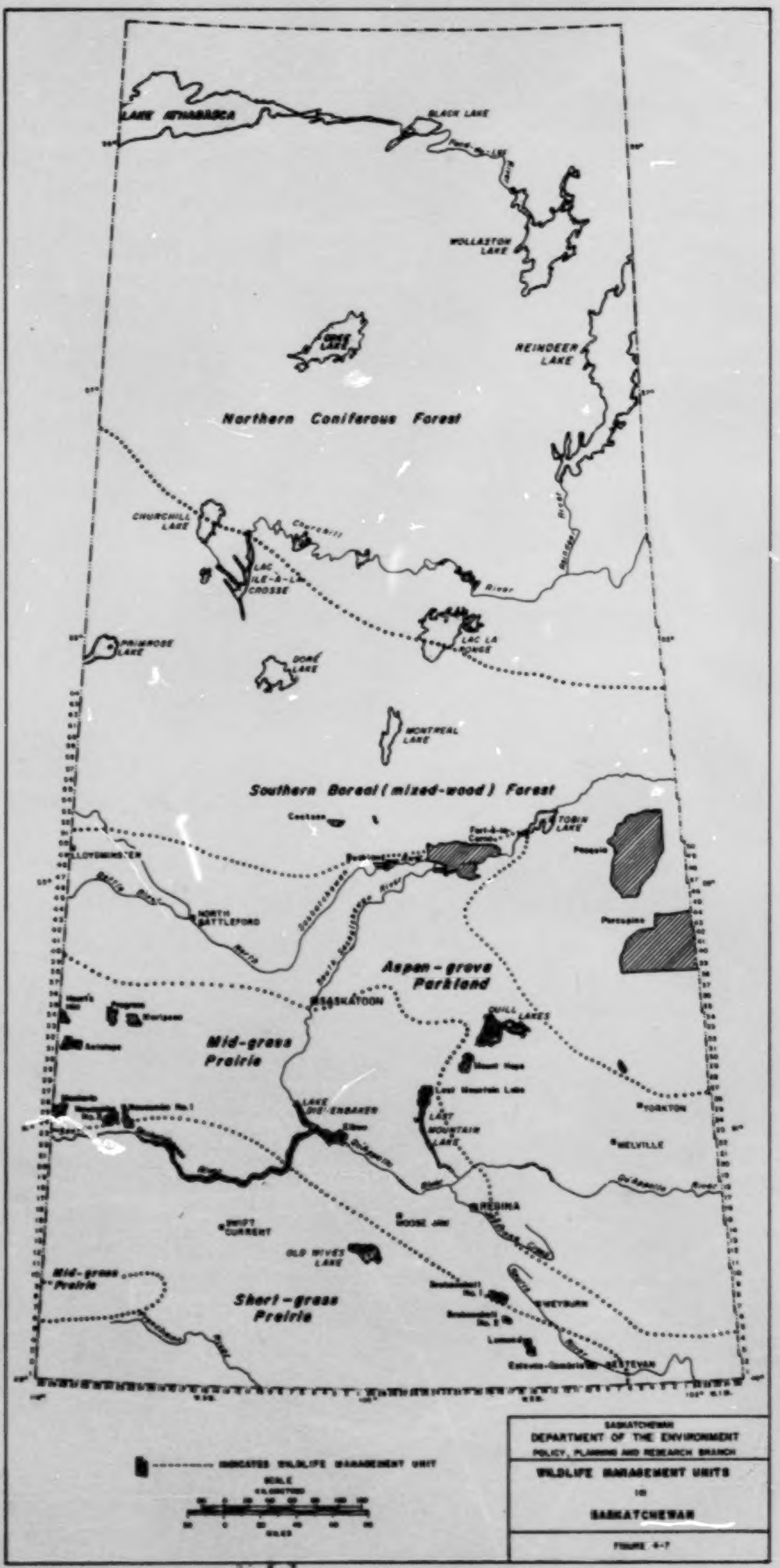
Table 4-30

Wildlife management units

Name	Order-In-Council Number	Date Established	General Location (Twp.-Rge.-Mer.)	Area (Acres)	Land Ownership	Habitat Type[1]	Original Purpose of Designation	Other Designations
Antelope	1098/71	1971	31-28-W3	34,130	Crown	2	Protect livestock and property	PFRA Community Pasture
Brokenshell No. 1	1098/71	1971	9-18-W2	22,560	Crown	2	Protect livestock and property	PFRA Community Pasture
Brokenshell No. 2	1098/71	1971	7-17-W2	8,129	Crown	1	Protect livestock and property	PFRA Community Pasture
Buckland	1098/71	1971	49-27-W2	16,448	Crown and Patented	3	Protect private property	Part of a Provincial Forest, contains a Recreation Site
Cookson	1336/72	1970	53-3-W3	13,536	Crown	4	Protect wildlife	Provincial Community Pasture
Elbow	764/70	1970	24-3-W2	30,042	Crown	2	Protect livestock and proptery	Contains a PFRA Community Pasture and part of a Provincial Park
Estevan-Cambrai	1098/71	1971	2-9-W2	6,587	Crown	1	Protect livestock and property	PFRA Community Pasture
Fort a la Corne	764/70	1970	50-16-W2	322,568	Crown	3 & 4		Provincial Forest, contains a Provincial Historic Marker
Heart's Hill	1098/71	1971	34-28-W3	15,062	Crown	2	Protect livestock and property	PFRA Community Pasture
Last Mountain Lake	1213/72	1972	28-23-W2	20,710	Crown	2	Protect waterfowl	Contains a Regional Park
Lomond	1098/71	1971	4-15-W2	17,972	Crown	1	Protect livestock and property	PFRA Community Pasture
Mantario	1098/71	1971	25-29-W3	24,960	Crown	2	Protect livestock and property	PFRA Community Pasture
Mariposa	1098/71	1971	34-21-W3	26,364	Crown	2	Protect livestock and property	PFRA Community Pasture
Mount Hope	1291/70	1970	30-20-W2	32,200	Crown	3	Protect livestock and property	PFRA Community Pasture
Newcombe No. 1	1098/71	1971	25-22-W3	19,840	Crown	1 & 2	Protect livestock and property	PFRA Community Pasture
Newcombe No. 2	1098/71	1971	25-24-W3	24,480	Crown	2	Protect livestock and property	PFRA Community Pasture
Pasquia	894/72	1972	50-3-W2	648,276	Crown	4	Manage big game	Within a Provincial Forest, contains two Protected Areas and a Recreation Site
Porcupine	894/72	1972	41-2-W2	694,040	Crown	4	Manage big game	Within a Provincial Forest and contains a Provincial Historic Marker, a National Historic Site, and three Recreation Sites
Progress	1098/71	1971	34-24-W3	20,257	Crown	2	Protect waterfowl	PFRA Community Pasture

[1] Key to Major Habitat Types —
1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspent-grove Parkland
4. Southern Boreal (mixedwood) Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 25. Personal Communication.


LAKE ATHABASCA
BLACK LAKE
WOLLASTON LAKE
CREE LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill
LAC ÎLE-À-LA CROSSE
River
LAC LA RONGE
PRIMROSE LAKE
DORÉ LAKE
MONTREAL LAKE
Southern Boreal (mixed-wood) Forest
TOBIN LAKE
LLOYDMINSTER
NORTH BATTLEFORD
Saskatchewan
North
South Saskatchewan
Aspen-grove Parkland
SASKATOON
QUILL LAKES
Mid-grass Prairie
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
YORKTON
MELVILLE
Qu'Appelle River
REGINA
MOOSE JAW
SWIFT CURRENT
OLD WIVES LAKE
Mid-grass Prairie
Short-grass Prairie
WEYBURN
ESTEVAN
INDICATES WILDLIFE MANAGEMENT UNIT
SCALE
KILOMETRES
MILES

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

WILDLIFE MANAGEMENT UNITS
IN
SASKATCHEWAN

FIGURE 4-7

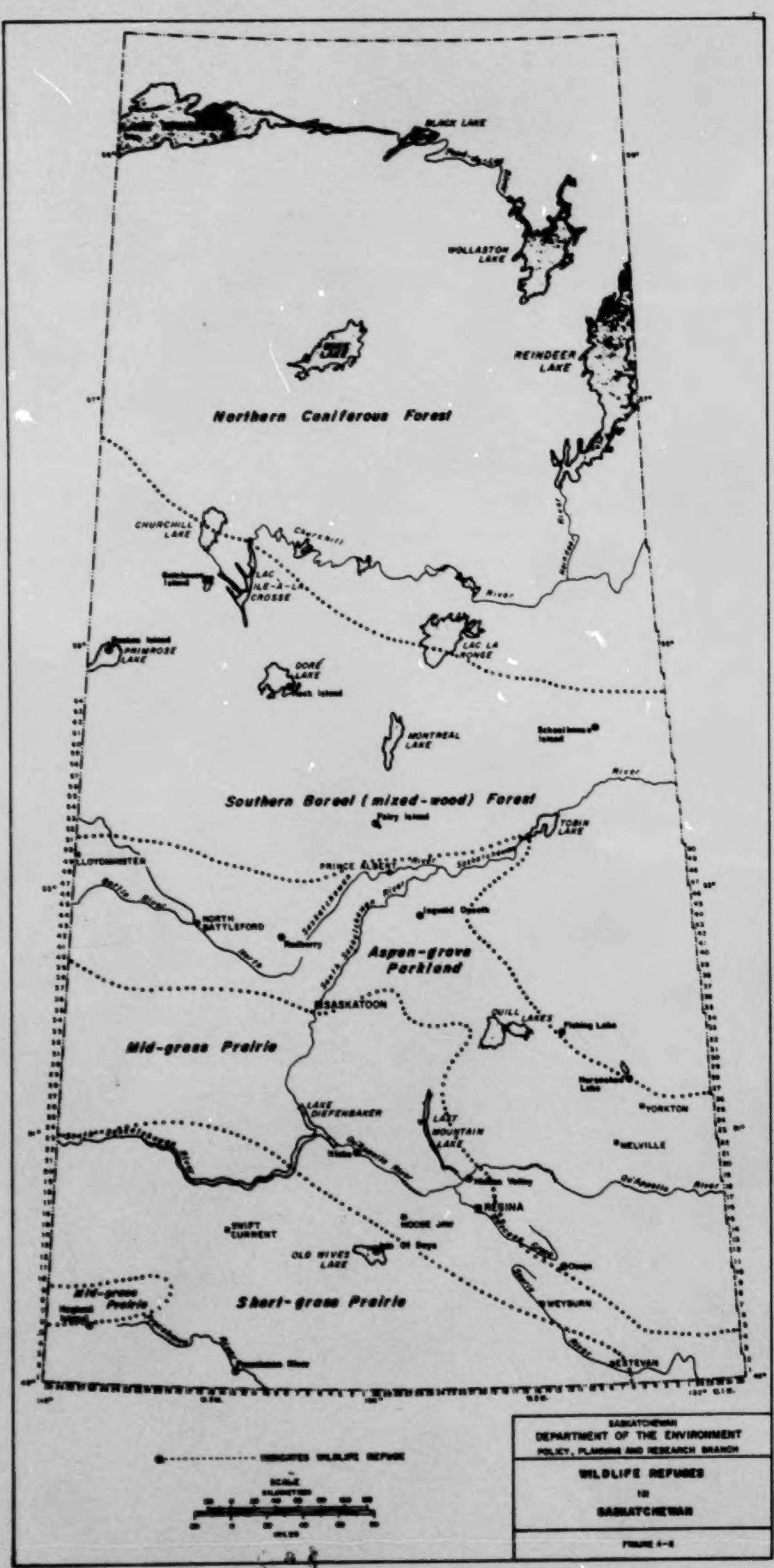
Table 4-31

Wildlife refuges

Name	Order-in-Council Number	Date Established	General Location (Sec.-Twp.-Rge.-Mer.)	Area (Acres)	Land Ownership	Habitat Type¹	Original Purpose of Designation	Other Designations
Backes Island	972/71	1971	11-69-25-W3	14	Crown	4	Protect colony of double-crested cormorants and white pelicans	Within a Provincial Forest
Fairy Island	1287/70	1970	35-53-27-W2	160	Crown	4	Biological research	Within a Provincial Forest and a Research and Teaching Area
Fishing Lake	617/74	1974	30-33-11-W2	N/A	Crown	3	Preserve natural state and protect wildlife	
Frenchman River	1287/70	1970	NE 23-2-13-W3	160	Crown	1	Protect prairie dog colony	
Gatehouse Island	972/71	1971	13-76-16-W3	10	Crown	4	Protect colony of double-crested cormorants and white pelicans	Within a Provincial Forest
Heglund Island	1287/70	1970	14, 15-6-26-W3	192	Crown	1	Protect colony of double-crested coromorants and white pelicans	
Hidden Valley	1287/70	1970	N 21-20-20-W2	320	Patented	2	Preserve natural state	
Horseshoe Lake	972/71	1971	SE 2-29-5-W2	140	Crown	3	Protect Canada geese and blue heron colony	
Ingvald Opseth	195/73	1973	NE 6-45-23-W2	160	Crown	3	Nature sanctuary	
Isle of Bays	1287/70	1970	28, 29-13-29-W2	480	Crown	1	Protect colony of double-crested cormorants and white pelicans	Within a Federal Bird Sanctuary
Nisku	1287/70	1970	23-2-W3	4,224	Crown	2	Protect Canada goose breeding project	Contains an Association Community Pasture
Osage	1734/76	1976	26-11-12-W2	99.9	Crown	2	Nature sanctuary	
Redberry	1287/70	1970	13, 14-43-9-W3	85	Crown	3	Protect colony of double-crested cormorants and white pelicans	Within a Federal Bird Sanctuary
Rock Island	972/71	1971	28-66-8-W3	13	Crown	4	Protect colony of double-crested cormorants and white pelicans	Within a Provincial Forest
Scheelhaase Island	972/71	1971	20-62-6-W2	33	Crown	4	Protect colony of double-crested cormorants and white pelicans	Within a Provincial Forest

¹Key to Major Habitat Types —
1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 30. Personal Communication.


BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill
River
LAC ILE-A-LA CROSSE
PRIMROSE LAKE
DORÉ LAKE
LAC LA RONGE
MONTREAL LAKE
River
Southern Boreal (mixed-wood) Forest
Fairy Island
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
Saskatchewan
River
Battle River
NORTH BATTLEFORD
North
South Saskatchewan River
Aspen-grove Parkland
SASKATOON
QUILL LAKES
Fishing Lake
Mid-grass Prairie
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
YORKTON
MELVILLE
Qu'Appelle
River
REGINA
SWIFT CURRENT
MOOSE JAW
OLD WIVES LAKE
WEYBURN
ESTEVAN
Mid-grass Prairie
Short-grass Prairie
102° W.P.
INDICATES WILDLIFE REFUGE
SCALE
KILOMETRES
MILES

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

WILDLIFE REFUGES
IN
SASKATCHEWAN

FIGURE 4-8

Table 4-32

Lands purchased under the wildlife development fund to August 1978

Name	Date purchased	General location (Sec-Twp-Rge-Mer)	Area (acres)	Land ownership	Habitat type¹
Morrison	1973	34-15-33-W1	325	Crown	3
Cummings	1973	26-40-10-W2	160	Crown	4
Welgush	1973	24-32-31-W1	158	Crown	4
Babcock	1973	25-9-2-W2	458	Crown	3
Kaleman	1973	32-17-2-W2	120	Crown	3
Tingley	1973	8-16-7-W2	120	Crown	3
Pawlowski	1973	26 & 35-40-10-W2	320	Crown	4
Dunsmore	1973	18-17-31-W1	160	Crown	3
Muszty	1973	4 & 5-18-2-W2	314	Crown	3
Kirkpatrick	1973	25-13-33-W1	160	Crown	3
Springer	1973	15-17-31-W1	160	Crown	3
Molnar	1973	36-17-2-W2	160	Crown	3
Void	1973	21-15-4-W2	240	Crown	3
Ramsay	1973	31-39-19-W3	154	Crown	4
Hodeken	1973	27-31-31-W1	161	Crown	4
Marathon Realty	1973	35-12-2-W2	160	Crown	2
R.M. of Calder No. 241	1973	6-27-30-W1	144	Crown	4
Rurak	1973	14 & 23-26-31-W1	316	Crown	3
R.M. of Hazel Dell No. 335	1973	26 & 35-37-7-W2	630	Crown	4
Miller	1974	9, 4 & 7-36-5-W2	1,434	Crown	4
R.M. of Garry No. 245	1974	19-27-8-W2	160	Crown	3
Tatton	1974	2-18-33-W1	160	Crown	3
Werner	1974	3-29-6-W3	160	Crown	4
Epp	1974	18-49-10-W3	160	Crown	4
R.M. of Hazel Dell No. 335	1974	5-38-9-W2	130	Crown	4
Koval	1974	6-30-7-W2	160	Crown	4
Procyshen	1974	26-31-31-W1	160	Crown	4
Kirsiuk	1974	15 & 19-28-8-W2	476	Crown	3
Harelkin	1974	33-41-13-W2	160	Crown	4
Sorochuk	1974	34-41-11-W2	159	Crown	4
Rogg	1974	31-39-9-W2	322	Crown	4
Marathon Realty	1974	23-9-2-W2	36	Crown	3
Marathon Realty	1974	33-22-3-W2	256	Crown	3
Marathon Realty	1974	7-18-4-W2	158	Crown	4
Marathon Realty	1974	11-21-2-W2	160	Crown	3
Marathon Realty	1974	15-28-4-W2	158	Crown	4
Marathon Realty	1974	13-28-5-W2	637	Crown	4
Marathon Realty	1974	27-10-5-W2	160	Crown	3
Marathon Realty	1974	35-10-5-W2	160	Crown	3
Marathon Realty	1974	21-20-7-W2	320	Crown	4
Marathon Realty	1974	17-12-9-W2	320	Crown	4
Zolotarchuk	1974	35-40-10-W2	160	Crown	4
Qyayle	1974	17-17-4-W2	632	Crown	3
Marathon Realty	1974	3-28-1-W2	160	Crown	4
Bahrey	1974	14-27-31-W1	160	Crown	3
Muth	1974	29-27-8-W2	320	Crown	3
Bachman	1974	30-39-19-W2	65	Crown	4
Marathon Realty	1974	27 & 35-48-21-W3	371	Crown	3
Marathon Realty	1974	9-14-2-W2	160	Crown	3
Marathon Realty	1974	13-15-5-W2	160	Crown	3
Marathon Realty	1974	17-15-5-W2	320	Crown	3
Mynr	1974	7-36-6-W2	320	Crown	4
Hogarth	1974	20, 21 & 28-40-11-W2	473	Crown	4
Government of Canada	1974	9-34-6-W3	220	Crown	2
Prokopchuk	1974	30-32-30-W1	159	Crown	4
Nilson	1974	2-18-2-W2	320	Crown	3
Szasz	1974	29-49-10-W3	160	Crown	3
Halldorson	1974	36-30-31-W1	156	Crown	4
R.M. of Hazel Dell No. 335	1974	34-37-9-W2	160	Crown	4
Warner	1974	15-54-20-W3	317	Crown	4
Boardman	1974	2-15-1-W2	161	Crown	3
Ford	1974	26-27-8-W2	160	Crown	3
Parker	1974	4-42-16-W2	155	Crown	4
Berglund	1974	18-42-13-W2	159	Crown	4
Berglund	1974	23-42-14-W2	160	Crown	4
Schuster	1974	36-41-12-W2	160	Crown	4
McDermott	1974	22-58-14-W3	157	Crown	4
Looker	1974	5-43-19-W2	226	Crown	4
Olson	1974	14-17-31-W1	640	Crown	3
Olson	1974	15-17-31-W1	479	Crown	3
Olson	1974	13-17-31-W1	320	Crown	3
Boardman	1974	1-15-1-W2	316	Crown	3
Kirschman	1974	13-27-9-W2	160	Crown	3
Land Bank	1974	30-42-13-W2	318	Crown	4
Land Bank	1974	10-28-23-W2	160	Crown	3
Gadzald	1974	32-40-12-W2	480	Crown	4
Bengert	1974	30-39-19-W3	152	Crown	3
Bengert	1974	31-39-19-W3	320	Crown	3
Pelechaty	1974	7-27-8-W2	320	Crown	3
Plaskan	1974	36-40-12-W2	160	Crown	4
Kaminski	1974	25-40-12-W2	159	Crown	4
Luneng	1974	26-39-10-W2	480	Crown	4
Moore	1974	35-22-2-W3	318	Crown	3
Kenwood Enterprises	1975	12-51-22-W2	124	Crown	4
Muggli	1975	19-42-16-W2	131	Crown	4
McConaghy	1975	25-42-20-W2	316	Crown	3
Tamke	1975	25-51-15-W3	299	Crown	4
Van Nes	1975	21-27-8-W2	160	Crown	3
Danchuk	1975	19-27-8-W2	160	Crown	3
Holowachuk	1975	23-35-7-W2	643	Crown	4
Land Bank	1975	2-44-12-W2	159	Crown	4
Kobes	1975	5-50-20-W3	160	Crown	3
Hanson	1975	18-27-8-W2	78	Crown	3
Land Bank	1975	27-33-6-W2	159	Crown	3
Paluck	1975	4-32-31-W1	160	Crown	4
Land Bank	1975	4-54-7-W3	157	Crown	4
Bernard & Heyn	1975	28-31-31-W1	160	Crown	4
Moffat	1975	16-53-27-W2	160	Crown	4
Palmer	1975	22 & 28-17-32-W1	304	Crown	3
Babecy	1975	26-37-10-W2	320	Crown	2
R.M. of Hazel Dell No. 335	1975	21-36-8-W2	160	Crown	4
R.M. of Hazel Dell No. 335	1975	15-37-8-W2	160	Crown	4
R.M. of Hazel Dell No. 335	1975	18-37-8-W2	160	Crown	4
R.M. of Hazel Dell No. 335	1975	23-37-8-W2	320	Crown	4
R.M. of Hazel Dell No. 335	1975	26-37-8-W2	640	Crown	4
R.M. of Hazel Dell No. 335	1975	14-37-9-W2	160	Crown	4
R.M. of Hazel Dell No. 335	1975	21-37-9-W2	160	Crown	4
R.M. of Hazel Dell No. 335	1975	22-37-9-W2	318	Crown	4
R.M. of Hazel Dell No. 335	1975	23-37-9-W2	440	Crown	4
R.M. of Hazel Dell No. 335	1975	25 & 26-38-9-W2	263	Crown	4
R.M. of Hazel Dell No. 335	1975	32-37-9-W2	618	Crown	4
R.M. of Hazel Dell No. 335	1975	34-37-9-W2	160	Crown	4
R.M. of Hazel Dell No. 335	1975	35 & 36-37-9-W2	480	Crown	4
R.M. of Hazel Dell No. 335	1975	5-38-9-W2	158	Crown	4
R.M. of Hazel Dell No. 335	1975	8-38-9-W2	480	Crown	4

Table 4-32 (Continued)

Lands Purchased Under the Wildlife Development Fund to August 1978

Name	Date purchased	General location (Sec-Twp-Rge-Mer)	Area (acres)	Land ownership	Habitat type*
R.M. of Spiritwood No. 496	1975	17-49-10-W3	160	Crown	4
R.M. of Spiritwood No. 496	1975	21 & 22-49-12-W3	493	Crown	4
Land Bank	1975	32-49-15-W3	306	Crown	3
Watrous Auto Body	1975	17-49-18-W3	320	Crown	3
Chadney	1975	9 & 16-40-11-W2	312	Crown	4
Szass	1975	8-49-10-W3	477	Crown	4
Salomon	1975	1-30-31-W1	160	Crown	4
Dmytrow	1975	9-53-13-W2	160	Crown	4
Kjellberg	1975	4 & 8-41-13-W2	320	Crown	3
Chadney	1975	19-40-11-W2	161	Crown	3
Kozun	1975	23-51-13-W2	160	Crown	4
R.M. of Pleasantdale No. 398	1975	20-41-18-W2	157	Crown	3
Montreal Trust	1975	22-49-15-W3	320	Crown	3
Siddons	1975	32-35-8-W2	161	Crown	4
Land Bank	1975	28-40-11-W2	160	Crown	4
Woolsey	1975	35-43-16-W2	77	Crown	4
Department of Agriculture	1975	36-54-11-W3	275	Crown	4
Armstrong	1975	18-39-13-W3	298	Crown	3
Rabatkin	1975	23-30-31-W1	160	Crown	4
R.M. of Spiritwood No. 496	1975	3-49-10-W3	160	Crown	4
Von Roch	1975	16-40-11-W2	157	Crown	4
Marathon Realty	1975	15-12-4-W2	155	Crown	3
Linger	1975	1-52-26-W2	158	Crown	4
Linger	1975	6-52-25-W2	158	Crown	4
Marathon Realty	1975	1-50-15-W3	318	Crown	4
Marathon Realty	1975	5-50-15-W3	158	Crown	4
Marathon Realty	1975	3-49-15-W3	481	Crown	3
Marathon Realty	1975	31-49-15-W3	160	Crown	3
Marathon Realty	1975	5-49-16-W3	320	Crown	3
Marathon Realty	1975	7-50-14-W3	158	Crown	4
Marathon Realty	1975	5-48-13-W3	642	Crown	3
Land Bank	1975	34-53-5-W3	159	Crown	4
Marathon Realty	1975	35-44-9-W3	161	Crown	3
Marathon Realty	1975	1-41-15-W3	640	Crown	3
Marathon Realty	1975	33-46-11-W3	330	Crown	3
Land Bank	1975	8-27-8-W2	160	Crown	3
Land Bank	1975	16-27-8-W2	158	Crown	3
Land Bank	1975	21-8-5-W2	155	Crown	3
Viberg	1976	35-16-4-W2	157	Crown	3
Johnson	1976	30-35-1-W2	160	Crown	4
Land Bank	1976	13-45-9-W3	153	Crown	3
Land Bank	1976	7-45-8-W3	155	Crown	3
Land Bank	1976	18-45-8-W3	156	Crown	3
Paluch	1976	5-32-31-W1	160	Crown	4
Ramsay	1976	30-39-19-W3	153	Crown	3
R.M. of Invergordon No. 430	1976	18-44-23-W2	160	Crown	3
Marathon Realty	1976	33-45-10-W3	322	Crown	3
Marathon Realty	1976	25-45-10-W3	160	Crown	3
Marathon Realty	1976	31-45-9-W3	160	Crown	3
Marathon Realty	1976	25-45-9-W3	155	Crown	3
Marathon Realty	1976	25-45-9-W3	159	Crown	3
Marathon Realty	1976	25-44-9-W3	144	Crown	3
Land Bank	1976	21-36-8-W2	160	Crown	4
Land Bank	1976	7-32-10-W2	160	Crown	3
Land Bank	1976	27-36-4-W2	640	Crown	4
Lake	1976	18-18-1-W2	320	Crown	3
Marathon Realty	1976	5-39-18-W3	450	Crown	4
Marathon Realty	1976	13-39-13-W3	627	Crown	3
Marathon Realty	1976	16-39-13-W3	296	Crown	3
Marathon Realty	1976	20-39-13-W3	325	Crown	3
Mishak	1976	5-52-25-W2	99	Crown	4
Schondelmeier	1976	32-31-20-W2	320	Crown	3
Schondelmeier	1976	5-32-20-W2	160	Crown	3
Gulak	1976	30-28-4-W2	159	Crown	4
Gashler	1976	10-32-19-W2	160	Crown	3
R.M. of Barrier Valley No. 397	1976	27-40-13-W2	320	Crown	4
Metz	1976	26-11-12-W2	90	Crown	2
Guenther	1976	19-39-13-W3	320	Crown	3
Marathon Realty	1976	7-38-17-W3	120	Crown	3
Rumpel	1976	6-38-9-W2	160	Crown	4
Holowachuk	1976	35-34-7-W2	160	Crown	4
Moffat	1976	16-53-27-W2	140	Crown	4
Land Bank	1976	25-28-9-W2	160	Crown	3
R.M. of Pleasantdale No. 398	1976	26-41-17-W2	59	Crown	4
R.M. of Pleasantdale No. 398	1976	19-42-18-W2	160	Crown	3
Farkus	1977	26-27-9-W2	160	Crown	3
R.M. of Invergordon No. 430	1977	35-44-23-W2	641	Crown	3
Neale	1977	30-14-32-W1	152	Crown	3
Black	1977	26-40-13-W2	160	Crown	4
Marathon Realty	1977	7-40-13-W3	480	Crown	3
Marathon Realty	1977	17-45-9-W3	157	Crown	3
Marathon Realty	1977	3-46-11-W3	160	Crown	3
Marathon Realty	1977	5-46-11-W3	318	Crown	3
Marathon Realty	1977	36-42-16-W3	475	Crown	3
Marathon Realty	1977	33-52-19-W3	640	Crown	4
Marathon Realty	1977	25-48-21-W3	160	Crown	3
Farr	1977	25-8-30-W1	320	Crown	3
Wolf	1977	14-38-24-W2	160	Crown	3
Gray	1977	31-45-9-W2	157	Crown	4
Firomski	1977	8-37-3-W2	158	Crown	4
Firomski	1977	8-37-3-W2	320	Crown	4
Land Bank	1977	8-44-4-W2	54	Crown	4
Land Bank	1977	17-44-4-W2	160	Crown	4
Land Bank	1977	19-44-4-W2	320	Crown	4
Land Bank	1977	19-44-4-W2	320	Crown	4
Hudacek	1977	13-18-2-W2	160	Crown	3
Hearn	1977	36-34-6-W2	160	Crown	4
Kenner	1977	13-38-24-W2	160	Crown	3
Kowalchuk	1977	29-2-4-W2	160	Crown	2
Wolfe	1977	2-16-7-W2	123	Crown	3
Farwell	1977	25-17-31-W1	160	Crown	3
Jensen	1977	32-42-11-W2	155	Crown	4
Toews	1977	31-52-11-W2	160	Crown	3
Overlid and Johnson	1978	34-28-8-W3	80	Crown	2
Overlid and Johnson	1978	35-28-8-W3	307	Crown	2
Overlid and Johnson	1978	4-29-8-W3	480	Crown	2
Palmer	1978	7-18-32-W1	147	Crown	3
Bohl	1978	36-37-9-W2	160	Crown	4
Fee	1978	30 & 31-54-11-W3	277	Crown	4
Marathon Realty	1978	9-46-11-W3	479	Crown	3
Slugoski	1978	27-34-7-W2	160	Crown	4
Alois and DeRoo	1978	33-10-32-W1	320	Crown	3
Lasko	1978	26 & 35-17-33-W1	320	Crown	3
[illegible]	1978	10-43-22-W2	160	Crown	3
Lischynski	1978	30-28-4-W2	160	Crown	4
Davidson	1978	1-10-33-W1	160	Crown	3
Shkus	1978	1-10-33-W1	160	Crown	3
Wiebe	1978	9-39-13-W3	156	Crown	3
Fitzpatrick	1978	33-37-9-W2	160	Crown	4
Dussner	1978	3-42-14-W2	160	Crown	4

*Key to Major Habitat Types —
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 35.

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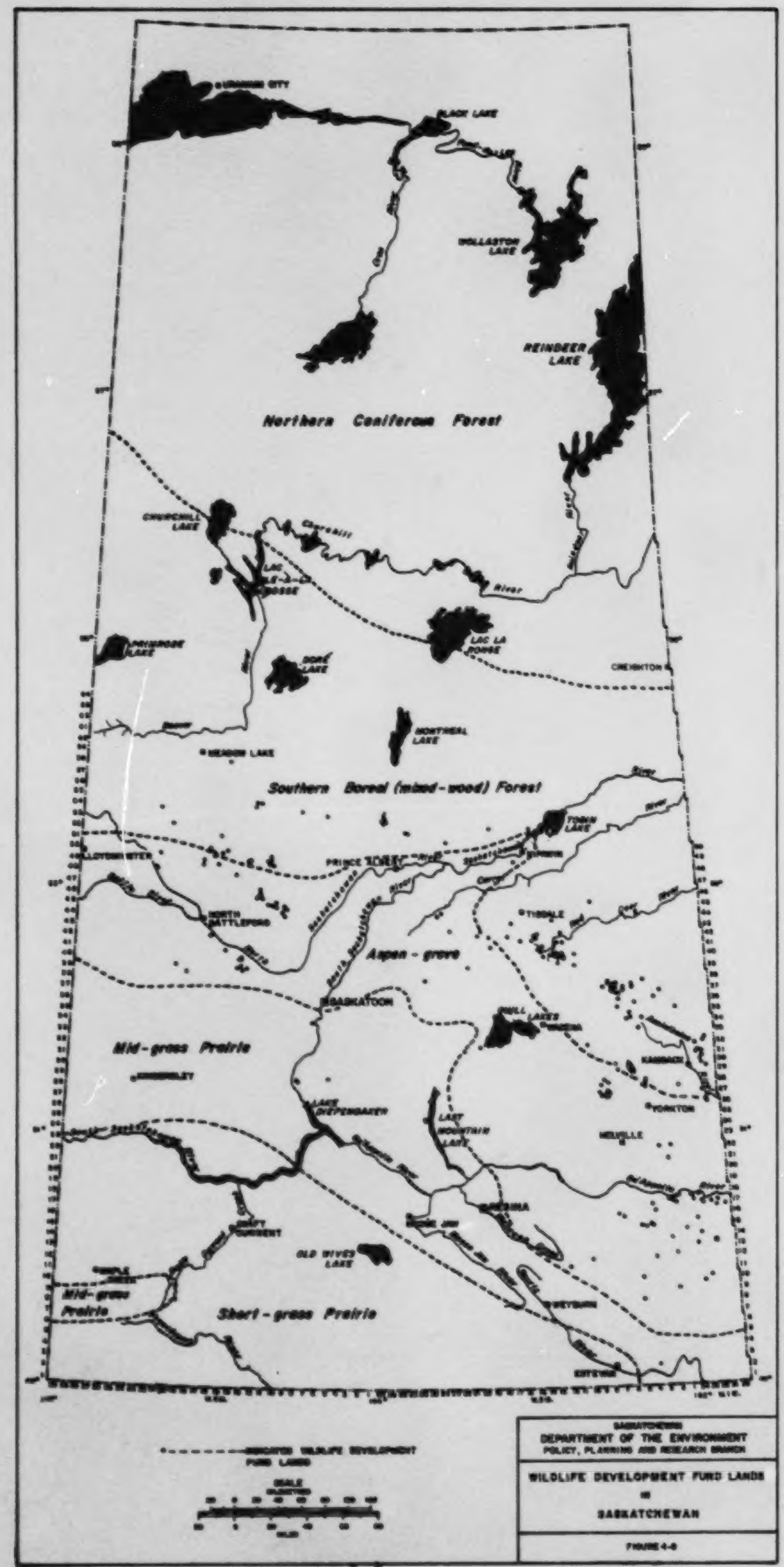

URANIUM CITY
BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill River
LAC ÎLE-À-LA-CROSSE
LAC LA RONGE
PRIMROSE LAKE
DORÉ LAKE
CREIGHTON
MONTREAL LAKE
MEADOW LAKE
Southern Boreal (mixed-wood) Forest
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
NIPAWIN
NORTH BATTLEFORD
TISDALE
Aspen-grove
SASKATOON
QUILL LAKES
WYNYARD
KAMSACK
Mid-grass Prairie
KINDERSLEY
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
YORKTON
MELVILLE
REGINA
MOOSE JAW
SWIFT CURRENT
OLD WIVES LAKE
MAPLE CREEK
Mid-grass Prairie
Short-grass Prairie
WEYBURN
ESTEVAN
102° W.10.
INDICATED WILDLIFE DEVELOPMENT FUND LANDS
SCALE
KILOMETRES
MILES

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

WILDLIFE DEVELOPMENT FUND LANDS
IN
SASKATCHEWAN

FIGURE 4-8

(d) Wildlife development fund land

In 1970 an amendment of *The Game Act* permitted establishment of a wildlife development fund. The fund was actually established in March, 1972. Funding was to come from a portion of each hunting licence fee collected, as determined by the Lieutenant-Governor in Council, and from moneys appropriated by the Legislature. The fund is now administered under *The Wildlife Act*.

The fund was designed to: (1) acquire land that is considered suitable for wildlife purposes by lease, purchase or otherwise, and (2) develop such land for wildlife purposes.

The program of land acquisition began in 1973. By August, 1978, 235 parcels of land totalling 58,000 acres had been purchased with money from the fund. None of the parcels were designated for any of the other 20 types of designated lands in Saskatchewan. Additional information about the areas is given in Table 4-32, and their locations are shown in Figure 4-9.

Most lands acquired to date were purchased to counteract destruction of deer habitat by brush clearing operations in the aspen parkland and southern boreal forest regions of the province. These lands will not be cleared; wherever a portion of the land was cleared, the area will be seeded to a grass-alfalfa mixture with the first growth for hay production and the second growth for brouse for deer. This seeding of forage crops is the only development planned for the lands. Grazing leases for the lands are not available except for a one-year lease to the previous landowner in the year he sells the land. Hunting is not considered to be incompatible with the objective of providing deer habitat and is therefore permitted.

4. Wildlife products

(i) Fur

For this report, fur products will be discussed under the sub-headings of fur farms and wild furs.

(a) Fur farms

Eighteen fur farms were operating in Saskatchewan during 1976-77. Of these, 13 were mink farms, two were chinchilla farms and three were fox farms.

In 1975-76, there were 25 fur farms, namely, 18 mink farms, four chinchilla farms and three fox farms. Fur farms have continued to decline in number over the past five years.

Mink pelt production decreased to 13,225 in 1975 from the 1974 production of 26,372. Chinchilla ranchers continued to operate. Prices are improving and interest is again being shown. Table 4-33 presents additional information on fur farming in Saskatchewan.

(b) Wild furs

Saskatchewan trappers harvest pelts from 23 species of fur-bearing mammals. The main species trapped include beaver, red fox, lynx, mink, muskrat, jack rabbit, squirrel, weasel and coyote.

The province is divided into two major trapping areas, the northern fur conservation area and the southern area. The dividing line is the fifty-third parallel of latitude.

Pelt production increased during the 1976-77 fur season, mainly because of the increase in beaver, mink and muskrat pelts. Table 4-34 presents information on the harvest of wild fur in Saskatchewan for the years 1965 to 1977.

(ii) Wildlife harvest from hunting

Wildlife harvest from hunting in Saskatchewan is comprised of game birds and big game animals. Game birds include migratory birds and upland game birds. Big game animals hunted include white-tailed deer, mule deer, moose, antelope, elk, woodland caribou and bear.

Table 4-33

Mink production in Saskatchewan 1969 to 1975

Year	Number on farms January 1	Number born	Number of pelts	Number on farms December 31	Total value of pelts	Average value of pelts
1969	30,142	89,785	91,280	23,396	$935,064	$10.24
1970	23,396	63,666	67,271	16,098	636,374	9.46
1971	16,144	45,402	42,785	14,425	522,117	12.20
1972	14,197	38,390	39,200	10,890	607,987	15.51
1973	10,585	27,667	27,133	9,526	491,203	18.10
1974	8,876	23,409	26,372	4,981	374,357	14.20
1975	5,026	12,747	13,225	3,531	257,659	19.48

Sources: Saskatchewan Department of Agriculture, *Annual Reorts*, 1972-1977.

Table 4-34

Harvest of wild fur in Saskatchewan 1965 to 1977

	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-1972	1972-73	1973-74	1974-75	1975-76	1976-77	Total
Badger	400	680	616	669	1,366	1,102	1,125	2,046	167	1,156	2,350	3,578	15,255
Bear	420	353	226	613	630	301	333	545	2,878	398	696	518	7,911
Beaver	28,549	27,528	41,280	42,880	39,749	34,337	36,924	45,225	31,188	31,895	37,858	53,946	451,359
Fisher	240	203	174	203	387	247	550	1,229	514	842	434	839	5,862
Black/Silver Fox	8	19	7	29	56	59	93	77	29	17	38	54	484
Cross Fox	209	259	132	314	453	493	731	632	366	232	301	371	4,493
Red Fox	5,046	6,767	3,263	10,083	10,601	9,238	14,400	17,009	23,371	8,870	16,766	13,492	140,926
White Fox	77	51	60	19	2	8	12	7	19	48	36	263	602
Lynx	934	1,216	2,639	5,208	10,294	9,229	7,265	7,890	2,477	1,389	1,697	3,321	53,559
Marten	867	690	785	934	1,044	257	444	547	346	229	262	682	7,087
Mink	12,770	15,525	20,906	21,814	20,806	10,637	14,026	23,739	12,574	11,040	19,328	33,862	217,027
Muskrat	282,598	337,804	282,263	172,491	239,112	259,574	386,368	278,987	119,609	239,171	455,012	609,680	3,642,669
Otter	722	563	617	698	715	910	573	1,058	694	576	920	1,000	9,046
Jack Rabbit	34,646	42,332	37,142	47,722	29,512	16,4[illegible]	9,874	6,881	8,460	2,965	648	1,093	237,772
Bush Rabbit	14	98	165	68	98	1	—	—	—	—	—	—	444
Raccoon	109	173	134	179	289	174	290	998	968	581	1,303	3,479	8,675
Skunk	9	28	8	38	18	11	8	61	11	1	8	52	253
Squirrel	226,342	149,043	444,885	257,326	222,241	123,022	102,390	63,625	42,837	104,318	116,304	124,410	1,976,743
Weasel	39,252	34,693	41,646	25,277	27,936	11,780	8,651	16,898	9,073	14,461	18,396	22,623	270,686
Wildcat	48	50	13	49	41	37	42	3	23	20	29	39	394
Coyote/Prairie Wolf	7,810	8,254	3,294	9,874	8,316	10,225	18,999	26,584	24,853	11,768	16,684	16,826	161,487
Timber Wolf	67	129	137	85	119	172	202	337	230	229	366	265	2,338
Wolverine	12	15	7	10	13	22	15	19	24	22	6	21	186
Total	621,148	628,473	880,419	596,583	613,698	488,334	601,315	494,377	280,709	430,028	689,442	890,414	7,214,940

Sources: Saskatchewan Department of Natural Resources, *Annual Reports*, 1967-73.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1974, p. 51.

Saskatchewan Department of Tourism and Renewable Resources, *Statistical Review Fur Season Northern Fur Conservation Areas 1974-75.*

Saskatchewan Department of Tourism and Renewable Resources, *Statistical Review of Wild Fur Production in Saskatchewan, 1976-77.*

(a) Migratory birds

In 1977 the duck harvest fell 63 per cent below the 1976 kill to 457,950. The goose harvest also decreased by four per cent in 1977 from the 1976 kill, to 164,523. The 1977 sandhill crane harvest decreased by 99.8 per cent to 50 kills from 2,734 kills in 1976. Table 4-35 compares the migratory bird harvest for the years 1973 to 1977.

The greatest percentage of ducks and geese killed are mallards and Canadas (Table 4-36).

(b) Upland game birds

All upland game bird harvests increased in 1977 except the sharp-tailed grouse, which declined by 13 per cent. The Hungarian partridge harvest increased by four per cent, and the ruffed and spruce grouse harvests increased by 18 and 30 per cent respectively above the 1976 harvests.

Table 4-37 compares the upland game birds harvest for the years 1969 to 1977.

(c) Pheasant

Hunter success of 3.3 pheasants per hunter in 1977 resulted in a harvest of 19,098 pheasants, an increase of 32 per cent over the 1976 kill of 14,488 birds. Figure 4-10 compares licence sales and pheasant harvests for the ten-year period from 1968 to 1977.

(d) White-tailed deer

Harvest of white-tailed deer in Saskatchewan for 1977 was 33,354 animals, an increase of four per cent over that of 1976. The hunter success rate rose from 55 per cent in 1976 to 60 per cent in 1977.

Table 4-35

Estimated migratory bird harvests 1973 to 1977

Year	Ducks	Geese	Sandhill Cranes
1973	371,973	122,210	2,394
1974	612,496	105,495	2,900
1975	711,081	165,465	3,703
1976	746,527	170,627	2,734
1977	457,950	164,523	50

Source: Saskatchewan Department of Tourism and Renewable Resources, *1977 Report of Hunter and Game Population Surveys*, Fisheries and Wildlife Branch, 1977, pp. 2 and 6.

Table 4-36

Percentage of duck and goose kills by species

	Ducks		Geese			
Year	Mallards Per cent	Others Per cent	Canadas Per cent	Whitefronts Per cent	Snows Per cent	Others Per cent
1973	76	24	47	29	21	3
1974	73	27	55	30	12	3
1975	75	25	62	24	10	4
1976	78	22	56	26	15	3
1977	80	20	53	28	16	3

Source: Saskatchewan Department of Tourism and Renewable Resources, *1977 Report of Hunter and Game Population Surveys*, Fisheries and Wildlife Branch, 1977, p.6.

Table 4-37

Estimated upland game bird harvest

Year	Sharp-tailed Grouse	Hungarian Partridge	Ruffed Grouse	Spruce Grouse
1969	126,796	104,993	47,557	15,961
1970	120,636	133,224	38,138	8,312
1971	158,060	113,670	37,869	4,187
1972	107,813	77,093	29,853	3,789
1973	88,178	74,668	12,743	1,363
1974	44,371	30,553	12,914	2,927
1975	52,546	39,239	31,350	8,993
1976	96,258	69,411	60,877	9,491
1977	83,274	72,444	74,210	13,536

Source: Saskatchewan Department of Tourism and Renewable Resources, *1977 Report of Hunter and Game Population Surveys*, Fisheries and Wildlife Branch, 1977, p.17.

(e) Mule deer

An estimated 2,683 mule deer were harvested in 1977 compared to 2,451 animals in 1976.

(f) Moose

Hunters in Saskatchewan harvested 4,510 moose in 1977, and 2,890 moose in 1976; correspondingly, 13,483 licences were issued for moose in 1977 compared to 8,438 in 1976. Figure 4-11 compares licence sales and moose harvested for the ten-year period 1968 to 1977.

(g) Antelope

Antelope harvest in 1977 was 1,396 compared to 1,460 animals in 1976, and fewer licences were issued in 1977 (1,747 compared to 1,915 in 1976).

(h) Elk

Hunter success during the 1977 elk season was 21 per cent, resulting in a harvest of 522 elk. Hunter success in 1976 was 16 per cent resulting in a harvest of 351 elk.

(i) Woodland caribou

A total of 88 woodland caribou were harvested in 1977, compared to 111 in 1976. Licence sales were 279 in 1977 and 1,352 in 1976. Figure 4-12 shows the licence sales and harvest for the ten-year period 1968 to 1977.

(j) Bear

Hunters in Saskatchewan harvested 1,079 bears in 1977 and 577 in 1976. Licence sales were 3,621 in 1977 and 3,276 in 1976.

5. Revenues from wildlife

(i) Fur sales

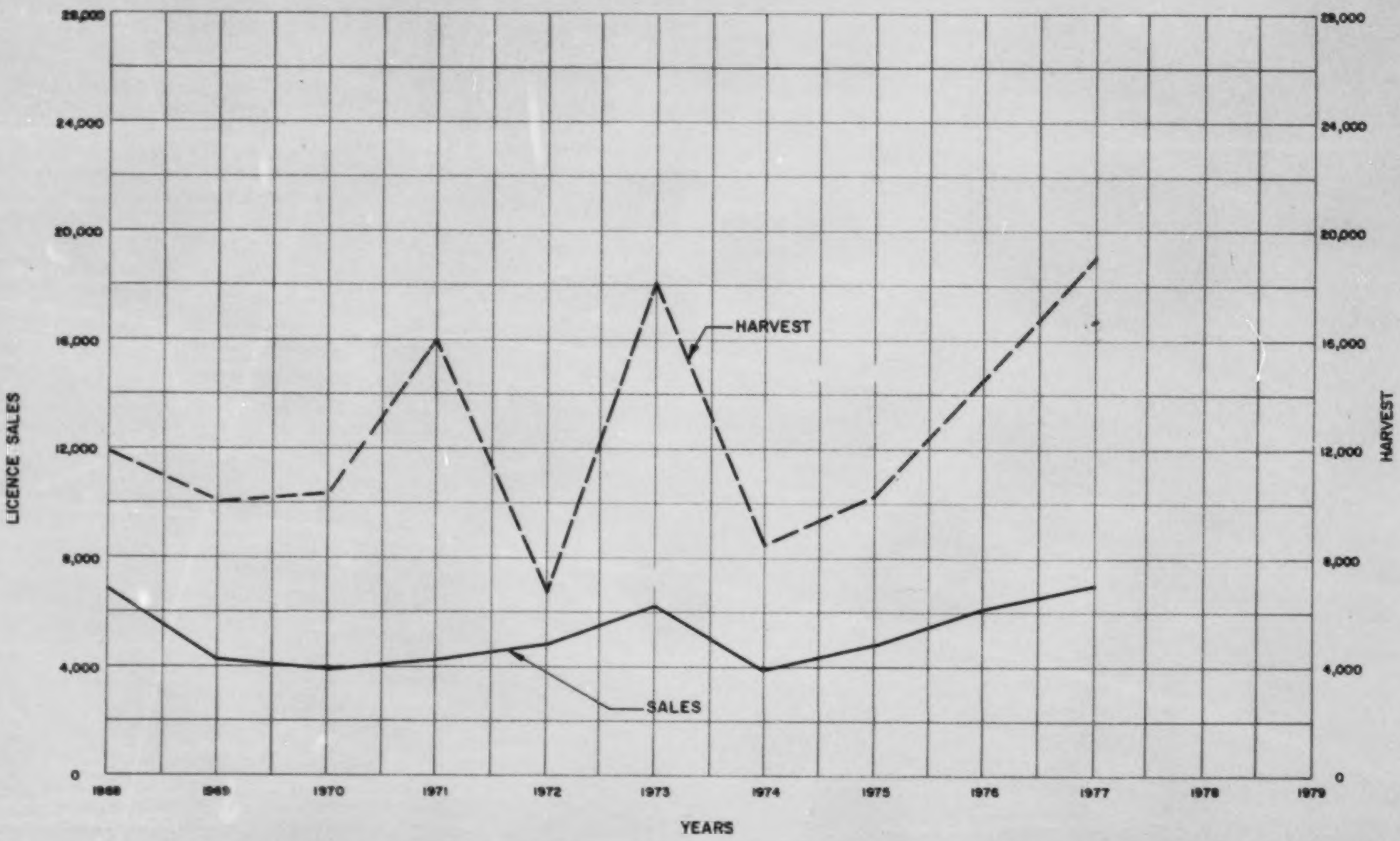
The production of pelts in 1976-77 increased by 23 per cent from 1975-76 (see table 4-33); the pelt value also increased by 64 per cent to $6,762,893.99. The reason for the increase in value was a general increase in production of pelts, as well as an overall increase in pelt prices. Table 4-38 presents the value of wild pelts harvested in Saskatchewan for the years 1971 to 1977.

Revenue received by the provincial government from trapping licences amounted to $30,[illegible]94 in 1976-77 and $22,266 in 1975-76. Table 4-39 presents additional information on revenue received from trapping licences for the years 1971 to 1977.

(ii) Hunting licences

Revenue generated by the sale of all hunting licences amounted to $1.36 million in 1976-77, an increase of $101,567 from the 1975-76 revenue of $1.25 million.

Licences sold during the 1976-77 hunting season totalled 156,532 compared to 145,246 during the 1975-76 hunting season. Table 4-40 presents additional information on licence sales in Saskatchewan for the years 1972 to 1977.



SOURCE: Saskatchewan Department of Tourism & Renewable Resources. 1977 Report of Hunter and Game Population Surveys, 1977, p.35.

SASKATCHEWAN

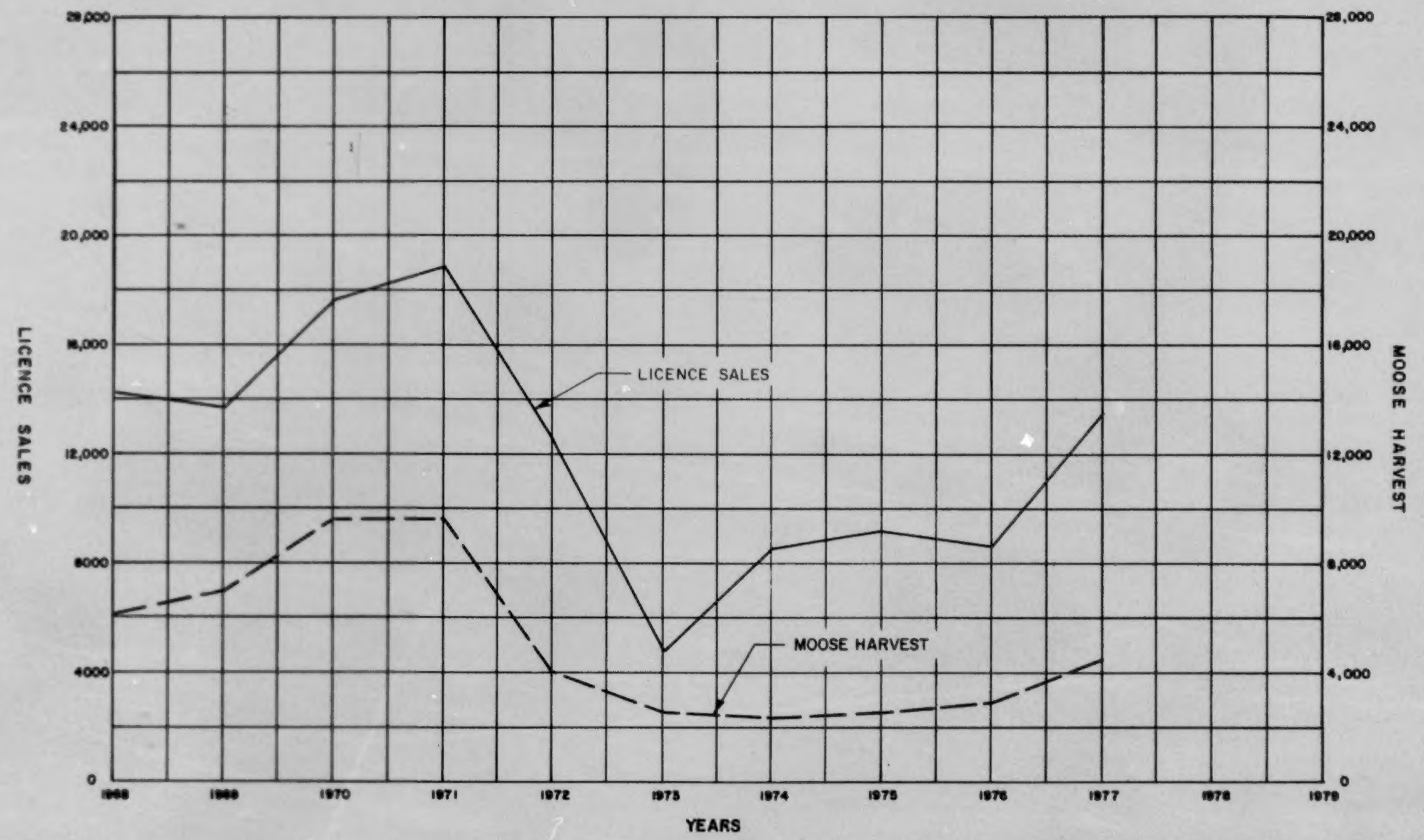
DEPARTMENT OF THE ENVIRONMENT

POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN

TEN YEAR COMPARISON OF PHEASANT LICENCE SALES AND PHEASANT HARVEST

FIGURE 4-10



Source: Saskatchewan Department of Tourism and Renewable Resources, 1977 Report of Hunter and Game Population Surveys, 1977, p.50.

SASKATCHEWAN

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POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN

TEN YEAR COMPARISON

OF

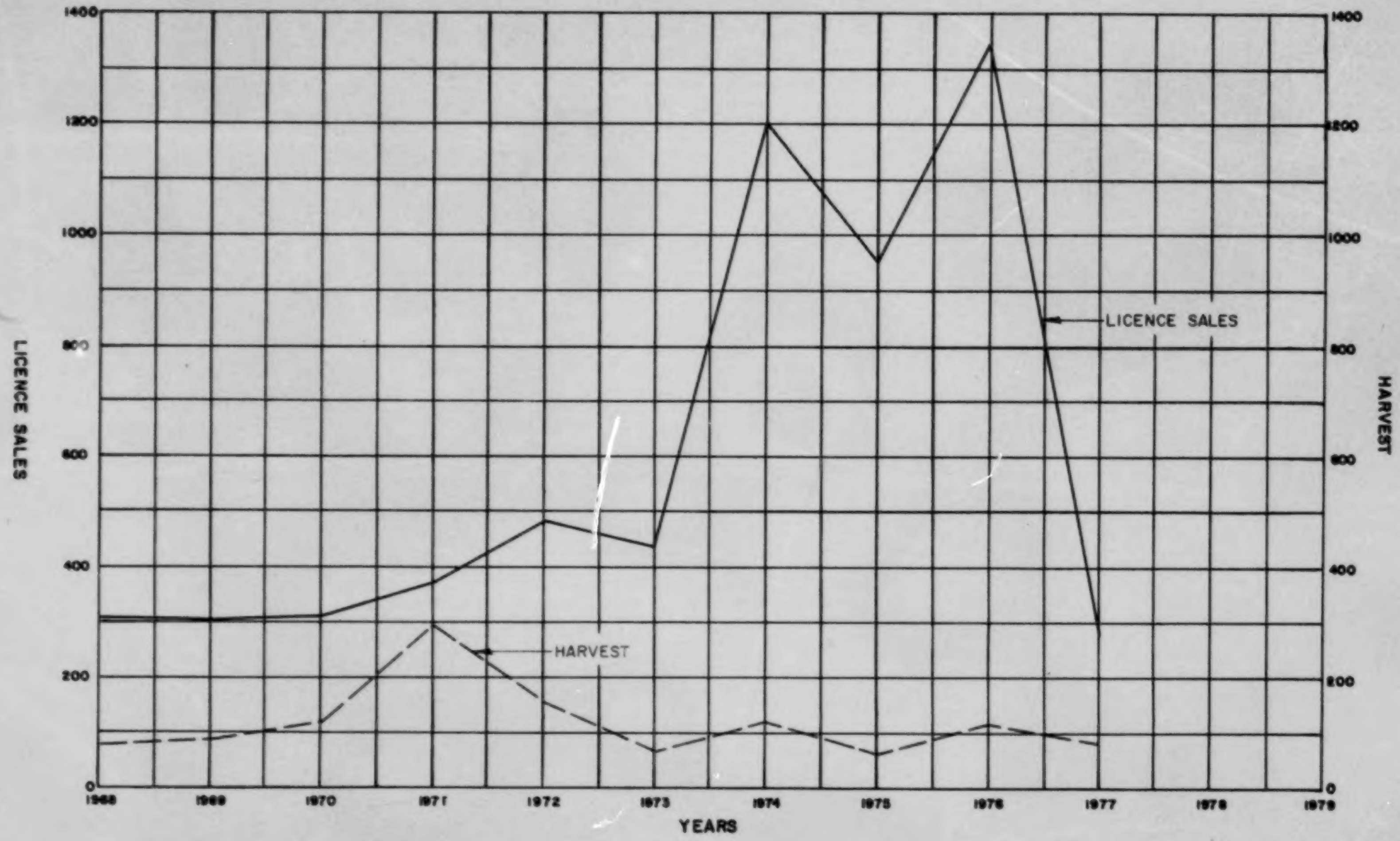
MOOSE LICENCE SALES

AND

MOOSE HARVEST

FIGURE

4-11



Source: Saskatchewan Department of Tourism And Renewable Resources, 1977 Report of Hunter and Game Population Surveys, 1977, p. 77.

SASKATCHEWAN

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POLICY, PLANNING AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN

TEN YEAR COMPARISON OF LICENCE SALES AND WOODLAND CARIBOU HARVEST

FIGURE 4-12

Table 4-38

Value of wild pelts harvested in Saskatchewan 1971 to 1977

Species	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
Badger	$11,745.00	$32,497.08	$9,479.33	$21,165.01	$78,402.80	$112,483.78
Bear	10,282.04	31,301.61	73,196.63	13,586.16	29,660.04	26,994.47
Beaver	540,307.57	761,337.60	453,057.14	376,484.95	523,841.37	939,830.68
Fisher	10,913.69	36,560.05	20,248.74	19,921.91	19,208.94	47,704.31
Fox — Black/Silver	1,472.27	1,771.58	1,303.00	418.00	1,810.04	2,981.19
— Cross	15,269.78	23,343.50	19,244.38	9,039.13	19,115.03	25,073.31
— Red	188,165.14	420,500.26	831,180.88	268,293.59	828,815.93	685,479.16
— White	146.00	185.00	605.00	1,034.95	784.72	9,744.39
Lynx	188,072.24	455,005.41	183,935.56	107,476.10	210,261.61	562,469.01
Marten	5,661.92	9,449.61	6,146.92	3,104.57	4,054.79	16,373.85
Mink	182,325.96	431,277.54	244,781.98	156,825.24	284,457.55	734,497.54
Muskrat	640,493.86	659,399.23	281,130.89	511,565.62	1,311,816.19	2,331,723.91
Otter	15,904.44	35,873.58	18,681.70	16,334.89	31,526.56	46,551.41
Rabbit — Jack	987.85	688.10	2,115.00	741.25	78.14	131.16
— Bush	—	—	—	—	—	—
Raccoon	2,528.80	12,089.00	15,173.79	7,407.25	29,799.71	82,242.22
Skunk	4.00	32.30	5.50	.50	4.00	26.00
Squirrel	37,651.30	57,936.70	35,815.11	73,267.87	74,257.09	86,168.42
Weasel	6,519.53	18,311.65	11,102.58	14,733.05	16,967.33	23,197.04
Wildcat	1,397.76	219.24	2,018.48	1,354.00	3,010.78	4,391.79
Coyote/Prairie Wolf	234,888.11	694,555.96	929,190.21	389,616.45	878,064.35	998,740.09
Timber Wolf	7,507.54	18,761.01	14,243.76	12,385.93	29,435.51	23,374.76
Wolverine	919.70	1,323.20	1,824.65	1,835.46	817.70	2,715.50
Total	$2,103,164.49	$3,702,419.21	$3,154,581.23	$2,006,582.88	$4,376,190.18	$6,762,893.99

Sources: Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1974, p. 51.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1977, pp. 34 & 35.

Table 4-39

Revenue from trapping licence sales in Saskatchewan

Year	Northern fur conservation area		Southern area	
	No. sold	Revenue[1]	No. sold	Revenue[1]
1971-72	2,515	5,030	5,046	10,812
1972-73	2,379	4,758	7,237	14,474
1973-74	2,576	5,152	7,207	14,414
1974-75	2,618	5,236	7,089	14,178
1975-76	2,627	5,254	8,506	17,012
1976-77	2,886	5,772	12,561	25,122

[1] Cost of licence is $2.00.

Sources: Saskatchewan Department of Natural Resources, *Annual Report*, 1972.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Reports*, 1974, 1977.

6. People benefiting from wildlife

Many people benefit from wildlife in various ways, such as hunting, trapping and observing. This report will deal primarily with the hunting and trapping wildlife benefits.

Observation of wildlife includes activities such as bird watching, researching and photographing. At this time statistics on observers of wildlife are extremely limited. However, some information on bird watching is available. In Saskatchewan an annual bird count is conducted during the Christmas period. This Christmas count is promoted by the Saskatchewan Natural History Society, which has approximately 2200 members. The first count was conducted in 1942, when 30 species of birds were recorded from seven different localities. In 1977, approximately 302 people were involved, and a total of 66 species were recorded from 68 localities. Table 4-41 presents additional information on the Christmas bird count in Saskatchewan for the years 1973 to 1977 inclusive.

Table 4-40

Hunting licence sales in Saskatchewan 1972 to 1977

Hunting licences	1972-73		1973-74		1974-75		1975-76		1976-77	
	No. sold	Revenue	No. sold	Revenue	No. sold	Revenue	No. sold	Revenue	No. sold	Revenue
Saskatchewan Resident Game Bird	47,217	$188,868	50,586	$202,344	52,591	$210,364	57,275	$229,100	62,288	$249,152
Canadian Resident Game Bird	5,606	28,025	2,898	57,960	3,821	76,420	4,312	86,240	4,746	94,920
Non-resident Game Bird	5,140	257,000	3,609	180,450	3,790	189,500	4,048	202,400	5,030	251,500
Pheasant	5,097	15,291	6,329	18,987	3,935	11,805	4,816	14,448	6,166	18,498
Saskatchewan Resident Deer	59,912	419,384	62,157	435,099	51,989	363,923	54,918	384,426	57,849	404,493
Saskatchewan Resident Second Deer	7,508	45,048	7,725	46,350	—	—	—	—	—	—
Saskatchewan Resident Third Deer	—	—	—	—	—	—	—	—	—	—
Canadian Resident Deer	469	11,725	324	9,720	554	16,620	389	11,670	376	11,280
Canadian Resident Second Deer	—	—	—	—	—	—	—	—	—	—
Canadian Resident Third Deer	—	—	—	—	—	—	—	—	—	—
Non-resident Deer	492	24,600	200	12,000	72	4,320	82	4,920	74	4,440
Non-resident Second Deer	—	—	—	—	—	—	—	—	—	—
Non-resident Third Deer	—	—	—	—	—	—	—	—	—	—
Mule Deer (special)	2,754	27,540	2,916	43,700	2,419	36,285	3,013	45,195	2,805	42,075
Saskatchewan Resident Moose	1,184	134,208	4,818	72,270	7,724	115,860	8,897	133,455	7,979	119,835
Saskatchewan Party Moose	48	672	—	—	—	—	—	—	—	—
Moose (special)	275	2,100	325	4,875	259	3,885	10	1,250	449	56,125
Canadian Resident Moose	20	1,000	1	60	4	240	2	250	—	—
Non-Resident Moose	916	91,600	378	47,250	436	54,500	425	53,125	—	—
Non-Resident Moose (Zone 36)	308	30,800	—	—	—	—	—	—	—	—
Saskatchewan Resident Elk	2,725	32,700	1,337	20,055	1,198	17,970	1,857	2,785	1,633	24,495
Elk (special)	300	3,600	350	5,250	347	5,205	425	6,375	578	8,670
Saskatchewan Resident Bear	917	4,585	1,153	5,765	1,649	8,245	2,046	10,230	3,081	15,405
Canadian Non-resident Bear	113	4,520	54	2,160	71	2,840	114	4,100	195	7,180
Saskatchewan Resident Woodland Caribou	377	4,524	432	6,480	1,176	17,640	902	13,530	1,320	19,800
Canadian and Non-resident Woodland Caribou	97	9,700	25	2,930	30	3,685	43	5,245	32	3,805
Barren-ground Caribou	24	240	21	210	224	2,240	75	750	115	1,150
Antelope	3,158	31,580	2,805	42,075	—	—	1,597	23,955	1,806	27,090
Total	154,656	$1,369,310	148,443	$1,216,030	132,289	$1,141,517	145,246	$1,258,519	156,532	$1,360,073

Source: Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1974, p. 50.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1976, Table 9.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1977, p. 34.

(i) Hunters

In 1976, almost 160,000 hunting licences were sold in Saskatchewan, with bird and big game licences split almost evenly. In 1976-77, a total of 62,288 resident game bird licences were issued, 9,776 Canadian resident and non-resident game bird licences were issued, and 6,166 pheasant licences were sold.

According to licence sales the number of hunters rose from 32,333 in the fiscal year ending in 1953 to a peak of 80,212 in 1971. In 1975 and 1976, because of the decline in deer populations, the number of licences issued were 54,918 and 57,849 respectively.

The number of hunters with moose licences tripled during the period 1959 to 1971. At the peak in 1971, 18,000 licences were sold. In 1977, 13,433 licences were sold; 13,082 licences went to Saskatchewan residents and 401 licences were sold to Canadians and non-Canadian residents.

The number of hunters with elk licences rose from 573 in 1957 to more than 2,400 in 1977.

Antelope are very susceptible to severe winter conditions and the number of hunting licences varies from year to year, mainly in accordance with fluctuations in the antelope population. For instance, no licences were issued in 1965 and 1974. There were 1,747 antelope licences sold in 1977.

The number of licenced bear hunters tripled between 1967 and 1971. Licence sales rose from 3,276 in 1976 to 3,621 in 1977, an increase of 11 per cent.

Table 4-41

Saskatchewan Natural History Society Christmas bird count 1973 to 1977

Year	No. of people involved*	No. of reporting localities	No. of species reported
1973	251	42	67
1974	274	44	79
1975	282	52	68
1976	290	55	68
1977	302	68	66

*Estimate

Sources: Saskatchewan Natural History Society, *The Blue Jay*, Vol. 32, No. 2, June, 1974, pp. 90-96.

Ibid., Vol. 33, No. 1, March 1975, pp. 30-38.

Ibid., Vol. 34, No. 1, March, 1976, pp. 45-53.

Ibid., Vol. 35, No. 1, March, 1977, pp. 21-30.

Ibid., Vol. 36, No. 1, March, 1978, pp. 16-18.

The number of licences issued for barren-ground caribou fluctuated from a high of 306 in 1950 to 20 in 1973. In 1976 and 1977, 75 and 115 licences respectively were sold to barren-ground caribou hunters. Woodland caribou licence sales dropped by 79 per cent in 1977, from 1,352 licences in 1976 to 279 licences in 1977.

Additional information on numbers of hunters is presented in Table 4-40. It should be noted that the above figures are for licenced hunters only; many treaty Indian people who do not require licences depend on big game animals for food. Statistics on native hunting are not available, but they would be significant with respect to certain species, particularly barren-ground and woodland caribou.

Table 4-42

Saskatchewan trappers and average incomes 1973 to 1977

Year	No. of licenced trappers	Value of furs	Average earning per trapper
1971-72	7,921	$2,103,164.49	$265.52
1972-73	9,616	3,702,419.21	385.03
1973-74	9,783	3,154,581.23	322.45
1974-75	9,707	2,006,582.88	206.71
1975-76	11,133	4,415,697.17	396.63
1976-77	15,447	6,762,893.99	437.81

Sources: Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1976, Table No. 11.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1977, p. 35.

(ii) Trappers

In 1976-77, 2,886 trappers were licenced under the northern fur conservation program, and an additional 12,561 were licenced under the southern Saskatchewan program, which covers trapping in the agricultural area of the province. Average income of trappers in 1976-77 was $437.81. Table 4-42 presents additional information on trappers and their average incomes for the years 1973 to 1977.

E. Outdoor recreation[a]

1. Legislation

Provincial jurisdiction over recreation is provided for in Section 92 of *The British North America Act*, which states that:

> generally all matters of a merely local or private nature in the provinces are under the authority of the province.

A variety of designated recreational areas have been established in Saskatchewan. These include 17 provincial parks, 99 regional parks, 90 recreation sites, 177 highway picnic grounds, nine provincial historic parks, 172 provincial historic sites, five undesignated recreation areas, two national historic parks, 45 national historic sites (two are major sites) and one national park (Prince Albert).

The BNA Act makes no provision for national parks; these were constituted under *The National Parks Act*, 1930. This Act has since been revised (1970, c. N-13). Most national parks were established from public lands owned either by the federal government or by the provinces. Generally, they have been defined and designated by mutual agreement, but once designated they become the sole jurisdiction of the federal authority.

In this section the legislation relevant to outdoor recreation in Saskatchewan (seven provincial statutes and two federal Acts) will be discussed (see Table 4-43).

Table 4-43

Legislation relevant to recreation in Saskatchewan

Saskatchewan legislation
The Rural Municipality Act
The Urban Municipality Act
The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act
The Regional Parks Act
The Parks Advisory Council Act
The Department of Tourism and Renewable Resources Act
The Planning and Development Act
The Provincial Lands Act
Federal legislation
Historic Sites and Monuments Act
National Parks Act

(i) **Saskatchewan legislation**

The Rural Municipality Act, R.S.S. 1978, C.R-26

This Act, administered by the Department of Rural Affairs, provides for licensing, regulating and controlling places of amusement and makes provisions for licensing operators of trailer parks or camps.

The Urban Municipality Act, R.S.S. 1978, c.U-10

This Act, administered by the Department of Urban Affairs, provides for the formation of resort villages from summer resort areas. Under the Act bylaws may be passed for the following purposes:

(a) establishing and maintaining swimming pools;

(b) acquiring land within or outside the municipality for a public park, forest area, garden or walk, or for athletic grounds, a playground, a parking area or a place for exhibitions;

(c) establishing (or acquiring), maintaining and operating museums, zoos and wild animal parks either within or outside the municipality;

(d) accepting and taking charge of land within or outside the municipality dedicated for a public park, garden or walk for the use of the inhabitants; and

(e) constructing (or acquiring) and operating exhibitions, theatres, civic auditoriums and places of amusement and establishing committees for the purpose of planning or operation thereof.

The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act, R.S.S. 1978, c.P-34

Under this Act, administered by the Department of Tourism and Renewable Resources and the Department of Northern Saskatchewan, provincial lands are described and designated as provincial parks to be used for the healthful enjoyment and the cultural, educational and social benefits of the people of Saskatchewan. The Act provides for establishment of recreation sites and regulations to be applied to such sites. It also provides for making regulations for protection, care, management, control, maintenance and improvement of provincial parks and pleasure grounds.

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[a] The material for this section was derived primarily from:

Canada Department of the Environment, *Qu'Appelle Basin Study Report on Recreation*, Volume 1, Inland Waters Directorate: Water Planning and Management Branch, Regina, 1972.

Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January, 1976, pp. 68-95.

Saskatchewan Department of the Environment, *Saskatchewan Environmental Legislation*, Policy, Planning and Research Branch, November, 1976, pp. 103-112.

Saskatchewan Department of Natural Resources, *Annual Reports*, 1968-73.

Saskatchewan Department of Natural Resources, *Visitation Report Provincial Recreation Development Areas 1971*, Parks and Recreation Branch, Regina, February, 1972.

Saskatchewan Department of Natural Resources, *Visitation Report Provincial Recreation Development Areas 1972*, Parks and Recreation Branch, Regina, January, 1973.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Reports*, 1974 to 1977.

Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Parks and Recreation Branch, 1973 and 1977.

The Regional Parks Act**,** R.S.S. 1978, c.R-9

This Act is administered by the Department of Tourism and Renewable Resources and the Department of Northern Saskatchewan. It provides for establishment of regional parks throughout the province and for establishment of regional park authorities. The Act allows for agreements between the Minister and the regional park authority for planning, maintenance, management and financial arrangements involved in establishment and operation of regional parks.

The Park Advisory Council Act, R.S.S. 1978, c.P-2

This Act allows the Lieutenant Governor in Council to set aside provincial lands for use as provincial or public parks.

The Department of Tourism and Renewable Resources Act, R.S.S. 1978, c D-24

Under the provisions of this Act the Minister may promote and develop tourism within the province, develop provincial parks, recreation sites and historic sites and, when he considers it necessary, engage in the following activities:

(a) undertake planning, research and investigation respecting tourism, parks, recreation sites and historic sites;

(b) carry out programs designed to stimulate, co-ordinate and promote tourism in Saskatchewan;

(c) plan, develop, construct, acquire, operate and maintain any park, recreation site, campground, tourist information facility, fish hatchery, game farm, wild animal or bird farm, zoo, public hunting or fishing area, research laboratory, forest nursery or museum;

(d) publicize the tourist industry and the resources and attractions of Saskatchewan; and

(e) encourage and promote improvement in the standards of accommodation, facilities and services offered to the travelling and vacationing public.

(ii) Federal legislation

Historic Sites and Monuments Act, R.S.C. 1970, c.H-6

The Act enables Environment Canada to mark or commemorate national historic places, to establish historic museums, to acquire any historic places in Canada and to provide for the administration, preservation and maintenance of historic places or museums.

National Parks Act, R.S.C. 1970, c.N-13

Under this Act the Minister may:

(a) purchase, expropriate or otherwise acquire any lands or interests therein, including the lands of Indians or of any other persons, for the purpose of a park; and

(b) administer, manage or control parks with regard to their preservation, protection of flora, management and regulation of fishing, prevention and extinguishing of fire upon or threatening park lands.

The Act makes provisions for the Governor-in-Council to set apart any land as a national park in order to preserve any historic landmark or object of historic, prehistoric or scientific interest of national importance.

2. Lands for recreation

Parks and recreation lands have been designated primarily for recreational purposes. With few exceptions, they are located on Crown lands. The federal government (through Parks Canada) administers the National Parks; the provincial government (through the Department of Tourism and Renewable Resources and the Department of Northern Saskatchewan) administers the provincial parks, regional parks and recreation sites.

(i) National parks

The general purpose of national parks is to set aside lands for the benefit, education and enjoyment to the people of Canada. The parks are to be maintained so that they will be left unimpaired for the enjoyment of future generations. They are managed by Parks Canada of Environment Canada.

Prince Albert National Park, the only national park in Saskatchewan, was designed to preserve in perpetuity a portion of the northern forest and lake country of northern Saskatchewan. The park lies within a zone of transition from aspen parkland to an aspen-dominated mixedwood forest, to a spruce-dominated mixedwood forest in the northern part of the park. The southern part of the park is characterized by numerous small, intermittent bodies of water, and the northern part is characterized by many small, permanent lakes and a few large lakes.

Originally established in 1927 with an area of 3,566 km², Prince Albert National Park was extended to the north and northwest in 1929 to encompass an area of 4,840 km². In 1947, three areas (one on the east and two on the south) were withdrawn from the park, leaving it with its present area of 3,875 km². The location of Prince Albert National Park is shown on Figure 4-13.

Proposals to adjust the park boundaries have been made by Parks Canada. These boundary changes would remove Anglin Lake in the southwest and add Lavallee Lake and Wabeno Lake in the north. These boundary changes would be mainly for administrative purposes.

Activities within the park are centered around the town site of Waskesiu and are almost entirely recreation-orientated, including golfing, swimming and picnicking. Recreational use of the rest of the park is rather limited; in 1969, only one per cent of the camper days recorded in the park were spent in primitive campgrounds.

In 1971 the National and Historical Parks Branch introduced a provisional master plan for the development of the park, which reserved large areas of the park for extensive outdoor recreational use. It is expected that a new management plan will be in effect by spring, 1980.

(ii) Provincial parks

A provincial park is land that is to be maintained and used as a public park and pleasure ground for the benefit and enjoyment of people of Saskatchewan. Parks are planned and managed by the Department of Tourism and Renewable Resources and the Department of Northern Saskatchewan.

Management of provincial parks has been primarily for outdoor recreation. In some parks, no other uses are permitted because of their size. Since 1960 it has been the policy of the Department of Tourism and Renewable Resources to prohibit non-recreational uses in newer parks.

Some Saskatchewan provincial parks are used for a variety of land uses other than recreation. These uses include agriculture, forestry, fisheries, hunting and trapping, gravel removal, mineral exploration and permanent residences.

The apparent reason for the multiple-use management of the parks established in the 1930's was that recreational developments were concentrated around small core areas of relatively small parks. Thus non-recreational uses could be allowed in the areas undeveloped for recreation without impairing recreational use.

In 1930 when the control of natural resources was transferred from Canada to Saskatchewan, the province acquired title to large areas of land. Six provincial parks (Cypress Hills, Duck Mountain, Good Spirit, Katepwa Point, Manitou and Moose Mountain) were immediately created. All but Katepwa Point and Manitou were located on former federal forest reserves. Manitou Provincial Park was disestablished (1961) and redesignated as a regional park. Greenwater Provincial Park was established in 1932. Four of the parks (Cypress Hills, Duck Mountain, Greenwater Lake and Moose Mountain) were between 10,000 and 100,000 acres in area, yet development for recreational purposes was restricted to small core areas in all parks. Development was designed for intensive (as opposed to extensive) recreational use of outdoor resources; facilities such as golf courses, changehouses and picnic areas were constructed. Cottage development was permitted in all of the above parks except the two smallest ones, Katepwa Point and Manitou.

In 1934 and 1939, two northern semi-wilderness parks, Nipawin and Lac la Ronge, were established. After 1939 no new parks were established until 1959, when Meadow Lake, a third semi-wilderness park, was created.

Four parks (Echo Valley, Pike Lake, Rowans's Ravine and The Battlefords) were established in 1960. Buffalo Pound Provincial Park was added to the system in 1963. These parks, which are relatively small (less than 2,600 acres), are located within 80 km of one or more cities, and have been developed for intensive outdoor recreational use.

With construction of Gardiner Dam and creation of Lake Diefenbaker in 1967, development of three new parks began. Danielson Park was established at the dam site in 1971, and Douglas and Saskatchewan Landing Parks, located near the Qu'Appelle Dam and north of Swift Current respectively, became provincial parks in 1973. Danielson Park encompasses 7,200 acres, Douglas 10,956 acres and Saskatchewan Landing 10,830 acres.

Table 4-44 summarizes information concerning Saskatchewan provincial parks, and Figure 4-13 shows locations of the parks. Total land area within the 17 parks is 1,229,721 acres.

(iii) Regional parks

The purpose of regional parks is to provide outdoor recreational facilities on a regional basis in the province.

Development of a regional park is a joint provincial-municipal effort. Under existing policy the province will not provide financial assistance for certain developments, including cottage subdivisions, museums, art exhibits, zoos, skating or curling rinks, community centres, gymnasiums or any commercial development other than camping facilities, trailer sites and concession booths.

The provincial government has established a number of guidelines to be followed when an area is being considered for regional park status. An area should be:

(a) at least 15 acres in area;

(b) serving or having the potential to serve a distinct regional function;

(c) over 80 km from an existing provincial park; and

(d) at least 40 km from an existing regional park.

These guidelines are not rigid; if local conditions warrant it, exceptions may be made.

The regional parks program emphasizes citizen participation in construction, operation and maintenance of the parks.

Regional park facilities usually include a picnic area, swimming facilities and a sports ground. Most parks have camping facilities and approximately half have golf courses. Sixteen parks include cottage subdivisions as part of the development. Hunting in regional parks is prohibited under The Provincial Big Game Regulations and Game Bird Regulations.

A total of 99 regional parks, comprising 17,182 acres, have been established in the province since 1960. Table 4-45 summarizes information concerning provincial regional parks, and Figure 4-14 shows locations of the parks.

Most parks are smaller than 200 acres except for Brightsand Lake Park, which covers over 2,000 acres. Land ownership of the parks is a combination of land owned by the Regional Park Authority and land leased from the province, municipalities and individuals. At least 34 authorities lease all or part of regional park land from the Department of Tourism and Renewable Resources.

(iv) Recreation sites

Recreation sites are lands developed for specific recreational purposes. Ninety recreation sites, with a total of about 40,000 acres, have been designated since 1962. Table 4-46 summarizes information concerning recreation sites in Saskatchewan, and Figure 4-15 shows the location of the sites.

Table 4-44

Provincial parks

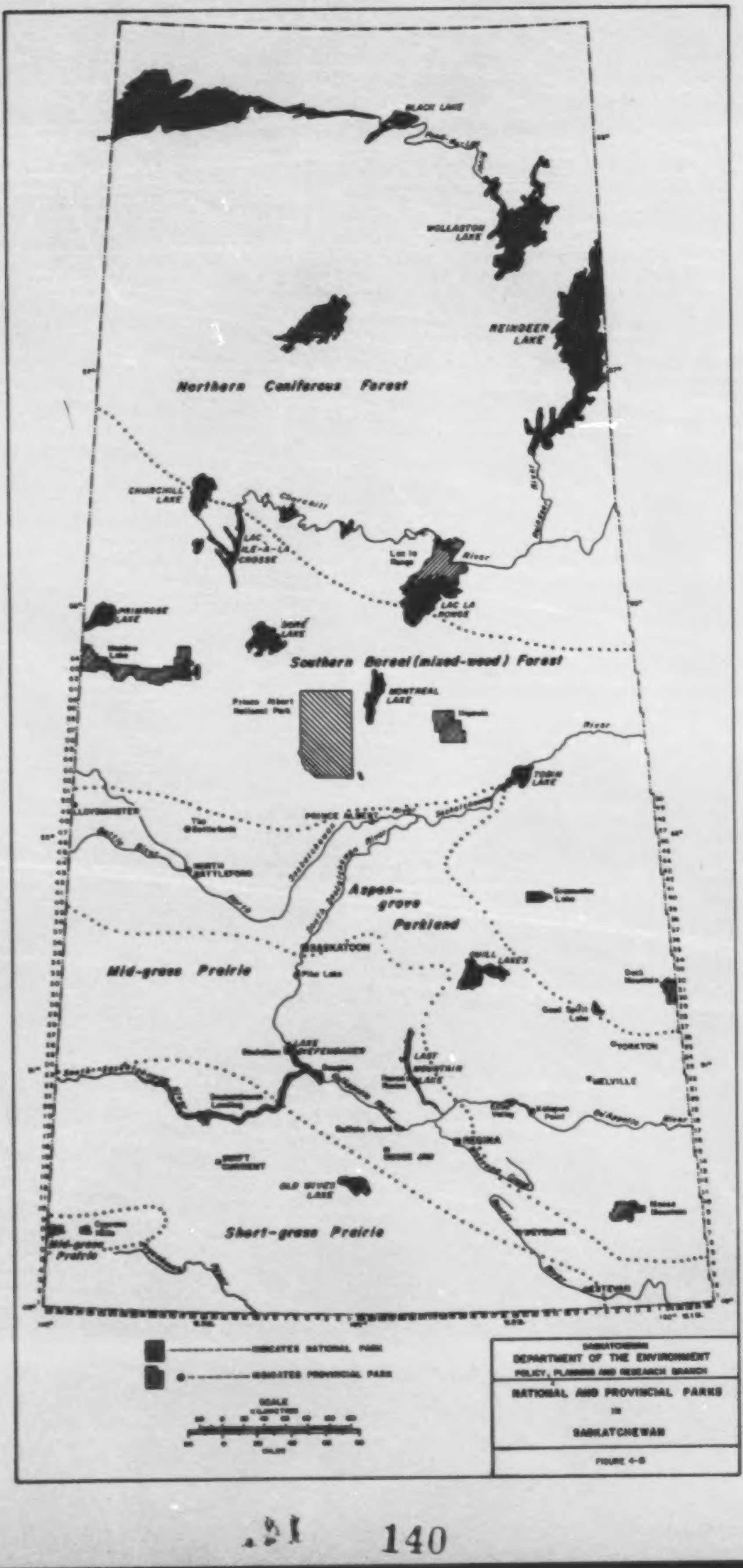
Name	Order-In-Council number	Date est.	General location	Area (acres)	Habitat[1] type	Other designations
Buffalo Pound	1255/63	1963	19-25-W2	2,521	2	
Cypress Hills	353/67	1931	8-26-W3	45,491	2 & 4	Within a Provincial Forest
Danielson	776/71	1971	26-6-W3	7,200	2	
Douglas	974/73	1973	24-4-W3	10,956	2	Partly within a Wildlife Management Unit, and PFRA Community Pasture
Duck Mountain	950/68	1931	30-30-W1	64,640	4	Part of Provincial Forest; Contains a Provincial Historic Marker
Echo Valley	1129/69	1960	21-14-W2	1,593	2	
Good Spirit Lake	1131/69	1931	29-5-W2	4,697	4	Contains a Provincial Historic Marker
Greenwater Lake	356/65	1932	41-9-W2	46,080	4	Part of Provincial Forest; Contains a Provincial Historic Marker
Katepwa Point	353/67	1931	4-20-12-W2	19	3	
Lac la Ronge	1245/64	1939	55°30'N 105°W	381,440	5	Within a Provincial Forest
Meadow Lake	1083/70	1959	62-16-W3	387,782	4	Part of a Provincial Forest
Moose Mountain	353/67	1931	10-2-W2	98,720	3	Provincial Forest; Contains an Historic Marker
Nipawin	95/34	1934	57-12-W2	161,280	4	Within a Provincial Forest; Contains a Provincial Historic Marker
Pike Lake	254/65	1960	34-6-W3	1,235	3	
Rowan's Ravine	254/65	1960	23-23-W2	672	2	Contains a Provincial Historic Marker
Saskatchewan Landing	974/73	1973	20-15-W3	13,830	1	Contains two Provincial Historic Markers
The Battlefords	945/68	1960	48-17-W3	1,472	3	Contains a Provincial Historic Marker

[1] Key for Habitat Type

1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest
5. Northern Coniferous Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January, 1976, p. 78.

Personal Communication.


BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill
LAC ILE-A-LA CROSSE
Lac la Ronge
River
LAC LA RONGE
PRIMROSE LAKE
DORÉ LAKE
Southern Boreal (mixed-wood) Forest
MONTREAL LAKE
Prince Albert National Park
River
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
NORTH BATTLEFORD
Aspen-grove Parkland
SASKATOON
Mid-grass Prairie
Pike Lake
QUILL LAKES
Good Spirit Lake
YORKTON
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
MELVILLE
Qu'Appelle
River
Saskatchewan Landing
Buffalo Pound
REGINA
MOOSE JAW
SWIFT CURRENT
OLD WIVES LAKE
Short-grass Prairie
Mid-grass Prairie
WEYBURN
ESTEVAN
102° W.E.
INDICATES NATIONAL PARK
INDICATES PROVINCIAL PARK
SCALE
KILOMETRES
MILES

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

NATIONAL AND PROVINCIAL PARKS
IN
SASKATCHEWAN

FIGURE 4-8

Table 4-45

Regional parks

Name	Order-in Council number	Date est.	General location (Sec-Twp-Rge-Mer)	Area (acres)	Land ownership	Habitat Type[1]	Other designations
Alton's Lake	856/65	1965	32-44-20-W3	124	Crown & Patented	3	Within a PRFA Community Pasture
Antelope	1366/72	1972	NE 21-15-18-W3	163	Patented	1	
Assiniboia	1402/77	1977	10-8-30-W2	175	Patented	1	
Bengough	1189/75	1975	NE 14-5-24-W2	170	Patented	1	
Big Beaver	1082/76	1976	Big Beaver	20	Patented	1	
Biggar & District	1212/72	1972	NW 5-36-14-W3	188	Patented	2	
Big River	1339/78	1978	17-56-7-W3	15	Patented	4	
Bow Valley	22/68	1968	S 23-3-2-W2	120	Patented	2	
Brightsand Lake	707/65	1965	32-53-20-W3	2.108	Crown	4	
Cabri	1188/76	1976	NW 2-20-17-W3	120	Crown	1	
Canwood	1982/61	1961	E 32-50-4-W3	306	Patented	4	
Carlton Trail	1479/72	1972	NW 34-19-31-W1	563	Patented	3	
Ceylon	1100/66	1966	NW 12-6-20-W2	20	Patented	1	
Clair Lake	1404/67	1967	SE 10-35-15-W2	38	Crown	3	
Clear Lake	1484/64	1964	SW 8-1-19-W2	52	Crown	1	
Clearwater Lake	558/66	1966	18-22-14-W3	281	Patented	2	
Craik & District	710/64	1964	NE 23-24-28-W2	30	Patented	2	
Crystal Beach	1464/77	1977	SE 3-32-12-W3	160	Patented	2	Within a Game Preserve
Duck Mountain	1398/77	1977	35-29-30-W1	140	Crown	4	Within a PFRA Pasture
Dunnet	155/65	1965	SE 13-12-23-W2	75	Patented	1	
Eagle Creek	1031/63	1963	NW 29-37-10-W3	240	Crown	3	
Elrose	1272/75	1975	4-26-15-W3	10	Patented	2	
Emerald Lake	437/67	1967	SE 33-48-7-W3	108	Crown	3	
Eston Riverside	1156/62	1962	N 17-23-20-W3	50	Crown	1	
Fishing Lake	707/67	1967	20-33-11-W2	100	Crown	3	
Glenburn	1035/63	1963	N 32-40-12-W3	255	Crown & Patented	3	Contains a Provincial Historic Marker
Grenfell	1481/76	1976	5-17-7-W2	75		2	
Hazlet	537/62	1962	2-17-20-W3	92	Crown	1	
Herbert Ferry	755/69	1969	S 13-20-11-W3	160	Crown	1	
Hudson Bay	562/69	1969	28-44-3-W2	420	Crown	4	
Ituna	2077/67	1967	16-25-11-W2	90	Patented	3	
Jean Louis Legare	1333/61	1961	S 12-5-28-W2	342	Patented	1	
Kemoca	1749/70	1970	SE 33-14-11-W2	70	Crown & Patented	2	
Kindersley	1965/68	1968	NW 2-29-23-W3	250	Patented	2	
Kipabiskau	1318/65	1965	SE 35-41-16-W2	663	Crown	3	
Lac Pelletier	1733/64	1964	12-12-15-W3	500	Crown & Patented	1	Contains a Provincial Historic Marker
Lake Charron	1368/72	1972	31-39-16-W2	22	Crown	2	Within a Game Preserve
Langham	1155/78	1978	NE 30-39-7-W3	142	Crown	2	
Last Mountain	2001/61	1961	NW 32-27-23-W2	185	Crown	2	Wildlife Management Unit and Waterfowl Production Area
Lemsford Ferry	2003/61	1961	S½ 11-24-23-W3	135	Crown	1	
Leroy Leisure Land	971/72	1972	NW 8-35-20-W2	72	Patented	3	
Little Loon	1080/65	1965	S 34-51-16-W3	110	Crown	4	
Lucien Lake	1029/63	1963	SW 31-40-23-W2	60	Patented	3	
McLaren Lake	1290/62	1962	NE 26-15-29-W3	35	Patented	1	Partly within a Game Preserve
Macklin Lake	2081/62	1962	SE 3-39-28-W3	280	Patented	3	Within a Game Preserve
Dr. Mainprize	487/61	1961	S 34-4-12-W2	120	Crown	2	Within a Provincial Community Pasture
Manitou	2051/61	1961	10-32-25-W2	200	Crown and Patented	3	Part of a Game Preserve
Martin's Lake	1062/62	1962	30-46-7-W3	90	Crown	3	
McNab	1400/77	1977	28-36-18-W2	35	Patented	3	
Meadow Lake	1157/78	1978	NW 22-59-17-W3	90	Patented	4	
Meeting Lake	1316/65	1965	4-49-12-W3	37	Patented	4	
Melfort & District	321/73	1973	SW 8-45-18-W2	155	Patented	3 & 4	
Melville	615/64	1964	33-22-6-W2	275	Patented	3	
Memorial Lake	1128/62	1962	11-50-8-W3	220	Crown	3 & 4	Contains a Provincial Historic Marker
Meota	1578/67	1967	8-47-17-W3	41	Patented	3	
Moosomin	1033/63	1963	NE 6-13-31-W1	251	Crown & Patented	3	
Nickle Lake	1474/63	1963	NE 25-7-14-W2	88	Crown & Patented	1 & 2	
Nipawin & District	84/65	1965	SW 16-51-14-W2	201	Crown	3	
Notukeu	773/64	1964	SW 19-9-11-W3	32	Patented	1	Contains a Provincial Historic Marker
Ogema	1993/67	1967	27-7-22-W2	25	Patented	1	
Oro Lake	753/65	1965	SE 5-10-25-W2	140	Crown & Patented	1	Partly within a PFRA Community Pasture
Oungre Memorial	1037/63	1963	W 34-2-14-W2	120	Patented	1	
Outlook District	153/62	1962	NW 16-29-8-W3	80	Crown & Patented	2	
Oyama	1457/61	1961	NE 36-15-17-W2	160	Patented	2	
Palliser	754/64	1964	20-22-7-W3	320	Crown	1 & 2	Contains a Provincial Historic Marker
Pasquia	1039/63	1963	NW 32-48-11-W2	212	Patented	3	
Pine Cree	349/70	1970	3-8-21-W3	367	Crown	1	
Radville	1188/75	1975	SE 23-6-18-W2	17	Patented	1	
Redberry Lake	1541/68	1968	S½ 25-43-9-W3	98	Crown	3	
Regina Beach	705/67	1967	21-21-22-W2	200	Patented	2	
Rockin Beach	1252/64	1964	NW 9-3-29-W2	200	Patented	1	
Saltcoats	1291/62	1962	NE 36-23-2-W2	129	Patented	3	
Sandy Beach Lake	2009/66	1966	NE 36-51-28-W3	160	Patented	3	
Saskatchewan Beach	1250/64	1964	NE 24-21-22-W2	8	Patented	2	
Shamrock	1581/60	1960	NE 3-13-4-W3	65	Crown & Patented	1	
Silver Lake	725/64	1964	NW 14-49-23-W3	140	Patented	3	
Spring Lake	854/65	1965	NE 15-23-10-W3	120	Patented	1 & 2	
St. Brieux	788/72	1972	E½ 24-42-21-W2	192	Patented	3	
Struthers Lake	1314/65	1965	2-45-23-W2	68	Patented	3	
Sturgeon Lake	158/65	1965	N 24-51-2-W3	30	Crown & Patented	3 & 4	
Sturgis & District	1080/76	1976	21-35-2-W2	165	Crown & Patented	4	
Suffern Lake	1295/68	1968	25-42-28-W3	675	Crown & Patented	3	Within an Association Community Pasture
Sylvan Valley	1867/65	1965	29-5-29-W2	84	Crown	1	
Table Mountain	577/73	1973	30-44-18-W3	N.A.	Patented	3	
Thompson Lake	1285/61	1961	35-9-5-W3	193	Patented	1	
Tisdale & District	1084/76	1976	NE 35-44-15-W2	30	Patented	4	
Tramping Lake	789/64	1964	SE 4-35-20-W3	116	Crown & Patented	2	
Unity	930/73	1973	NE 14-40-23-W3	N.A.	Patented	3	
Valley	929/73	1973	NE 1-43A-3-W3	262	Patented	3	
Wakaw Lake	708/65	1965	36-42-26-W2	114	Patented	3	
Waldsea Lake	1332/61	1961	SE 14-38-23-W2	7	Patented	3	
Welwyn Centennial	111/65	1965	NW 2-16-30-W1	30	Patented	3	
West Central	1561/73	1973	21-31-18-W3	200	Patented	2	
White Sand	404/65	1965	SE 11-29-7-W2	300	Crown	3 & 4	
Wilkie	347/70	1970	E½ 6-40-19-W3	158	Patented	2 & 3	
Woodlawn	205/65	1965	NW 11-2-8-W2	422	Patented	1	Within a Game Preserve
Wood Mountain	1252/62	1962	20-4-3-W3	75	Patented	1	Contains a Provincial Historic Marker
Wynyard	1505/72	1972	15-32-16-W2	28	Patented	3	
York Lake	1525/66	1966	SW 28-25-4-W2	303	Crown & Patented	3	

[1] Key to Habitat Type —

1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest
5. Northern Coniferous Forest

Source: Saskatchewan Department of the Environment. *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 89.

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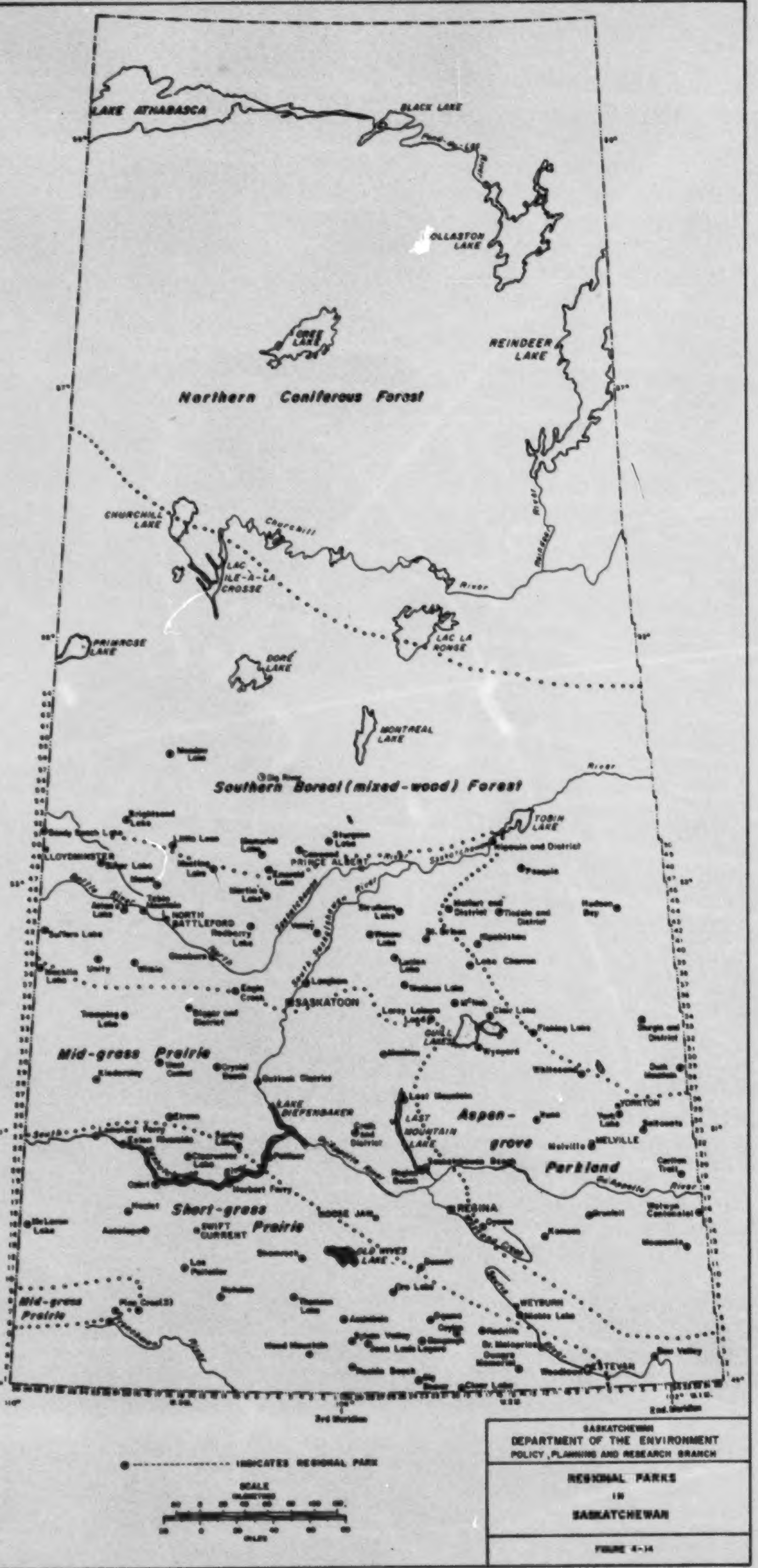
LAKE ATHABASCA
BLACK LAKE
WOLLASTON LAKE
CREE LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill
River
LAC ILE-A-LA CROSSE
PRIMROSE LAKE
DORÉ LAKE
LAC LA RONGE
MONTREAL LAKE
Southern Boreal (mixed-wood) Forest
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
NORTH BATTLEFORD
SASKATOON
Mid-grass Prairie
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
Aspen-grove Parkland
YORKTON
MELVILLE
Short-grass Prairie
SWIFT CURRENT
MOOSE JAW
REGINA
OLD WIVES LAKE
WEYBURN
ESTEVAN
Mid-grass Prairie
3rd Meridian
2nd Meridian
INDICATES REGIONAL PARK
SCALE
MILES

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REGIONAL PARKS
IN
SASKATCHEWAN

FIGURE 4-14

CPI 142

Table 4-46
Recreation sites

Name	Order-in-Council number	Date est.	General location (Sec-Twp-Rge-Mer)	Area (acres)	Habitat type*	Type of area	Other designations
Alsask	906/66	1968	SE 15-28-29-W3	10.5	2	Highway Campground	
Anglin Lake	807/76	N/A	55-27-W2	950.0	4		Within a Provincial Forest
Archerwill	1523/66	1965	18-40-14-W2	164.0	4		
Arm River	1523/66	1966	SW 5-22-25-W2	23.1	2	Highway Campground	
Beaver River	505/74	1950	NW 23-61-18-W3	1.0	4		
Besant	1523/66	1960	29-17-29-W2	153.0	1	Trans-Canada Campground	
Bethune	1523/66	1965	SE 33-20-24-W2	70.0	2	Picnic Site	Contains a Provincial Historic Marker
Beverly	505/74	1971	NE 16-15-15-W3	40.4	1	Trans-Canada Picnic Site	
Blackstrap Lake	505/74	1967	32-4-W3	1,300.0	2		
Blaine Lake	349/78	N/A	N½ 25-44-7-W3	32.0	3		
Borden Bridge	1523/66	1962	19-39-8-W3	38.5	3	Highway Campground	
Broadview	1523/66	1961	SW 28-16-4-W2	10.0	3		
Bronson Forest	505/74	N/A	57-25-W3	28,040.0	4		Within a Provincial Forest
Buffalo Pound Lake	1523/66	1968	19-24-W2	2,521.0	2		
Candle Lake	807/76	N/A		1,900.0	4		Within a Provincial Forest
Fisher Creek			E 26-56-23-W2				
Minowukaw Beach			55-22-W2				
Sandy Beach			55-23-W2				
Waskateena Beach			Waskateena Beach Subdivision				
Churchbridge	349/78	N/A	17-22-32-W1	34.5	2		
Coldwell Park	505/74	1962	18-27-7-W3	156.0	2	Campground	
Christopher Lake	807/76	N/A	6-53-26-W2	112.0	4		
Condie Reservoir	906/66	1966	28-18-20-W2	716.8	2	Nature Refuge	
Creelman	505/74	N/A	NE 17-10-10-W2	23.3	3	Picnic Site & Campground	
Crooked Lake	1523/66	1966	SW 8-19-5-W2	637.7	3	Picnic Site	
Dagg Creek	29/78	N/A	29-42-3-W2	30.0	4		Within a Provincial Forest
Dana	1523/66	1962	11-38-27-W2	14.6	3	Picnic Site	
Deer Creek	505/74	N/A	NW 27-52-25-W2	14.1	4		
Duck Lake	505/74	N/A	S 32-43-2-W3	1.5	3	Historic Site	
Duff	1523/66	N/A	NW 10-22-8-W2	9.3	3	Historic & Picnic Site	
Edam	505/74	1969	NW 23-49-20-W3	12.1	3	Picnic Site	
Elbow	505/74	N/A	2-25-5-W3	275.5	2	Overlook and Boat Launch	
Elrose	505/74	1968	NE 10-25-15-W3	4.5	2		
Elstow (Dr. Bicum)	1523/66	1963	8-35-1-W3	10.5	2	Picnic Site	
Emma Lake	807/76	N/A	28-53-27-W2	450.0	4		
Etter's Beach	505/74	1966	S 20-26-24-W2	363.8	2		
Foam Lake	505/74	1958	NW 29-30-11-W2	26.8	3	Picnic Campground	Contains a Provincial Historic Marker
Gardiner Historic Site	906/66	1966	NE 13-20-10-W2	2.2	3	Historic and Picnic Site	
Greenbush River	29/78	N/A	5-45-5-W2	18.0	4		
Griffin	1523/66	1961	SW 27-8-12-W2	5.9	1	Picnic Site	
Gull Lake	1523/66	1962	SE 5-14-18-W3	13.7	1	Picnic Site	
Halfway House	1161/77	N/A	SW 7-55-16-W3	140.0	4		Within a Provincial Forest
Harmona	1523/66	1961	NE 10-18-31-W1	1.0	3	Historic and Picnic Site	Contains a Provincial Historic Marker
Harris (Yellowlees)	1523/66	1963	S 3-32-12-W3	17.2	2	Picnic Site	Within a Game Preserve
Iron Spring	1523/66	1966	NW 9-37-18-W2	7.2	3	Picnic Site	
Iroquois Lake	505/74	1972	SE 24-48-8-W3	22.5	3	Picnic Site	
Kenaston	1523/66	1966	17-29-2-W3	11.3	2	Picnic Site	
Langenburg	505/74	1967	SW 27-21-31-W1	6.9	2	Picnic Site	
Lanigan	1523/66	1966	SW 29-33-22-W2	48.3	2	Highway Campground	
Lebret	505/74	1967	Village of Lebret	2.0	3	Boat Launch	
Lovering Lake	505/74	1973	1-22-27-W2	414.0	2		
McBride Lake	29/78	N/A	21-40-3-W2	160.0	4		Within a Wildlife Management Unit and a Provincial Forest
McLean	1523/66	1960	11-18-18-W2	22.0	3	Trans-Canada Campground	
Macoun	1523/66	1961	NW 32-3-9-W2	2.0	1	Picnic Site	
Maidstone	1523/66	1966	6-48-23-W3	9.2	3	Picnic Site	
Maple Creek	1523/66	1965	SW 8-12-26-W3	80.0	1	Trans-Canada Campground	
Margo	505/74	1968	SW 29-33-10-W2	12.6	3	Picnic Site and Campsite	
Meadow River	505/74	1971	SW 31-59-16-W3	3.5	4	Picnic Site & Campground	
Melfort	1523/66	1965	NE 31-44-18-W2	27.0	4	Highway Campground	
Morse	505/74	N/A	7-17-7-W3	14.3	1		
Moose Jaw	1747/75	N/A	20-16-26-W2	265.0	2		Within a Game Preserve
Moosomin	1523/66	1962	9-14-31-W1	80.0	3	Trans-Canada Campground	Contains a Provincial Historic Marker
Mossbank	1523/66	1961	SW 30-11-29-W2	5.7	1	Picnic Site	
Nesset Lake	505/74	1966	4-59-18-W3	1,050.0	4	Picnic Site & Campground	Within a Wildlife Management Unit and a Provincial Forest
Nisbet	505/74	1960	SW 16-49-26-W2	15.0	3	Highway Campground	Within a Provincial Forest
Parr Hill Lake	29/78	N/A	39-2-W2	30.0	4		Within a Wildlife Management Unit and a Provincial Forest
Parry	906/66	1965	SW 12-10-20-W2	24.5	2	Picnic Site	
Pepaw Lake	349/78	N/A	SW 10-40-2-W2	28.0	4		Within a Wildlife Management Unit and a Provincial Forest
Petrofka	1523/66	1963	SW 31-42-6-W3	62.0	3	Highway Campground	Contains a Provincial Historic Marker
Preeceville	906/66	1966	NW 26-34-5-W2	2.0	4	Picnic Site	
Raymore	1523/66	1964	NE 1-29-19-W2	23.7	3	Highway Campground	
Riverhurst Ferry	349/78	N/A	N½ 32-22-7-W3	20.0	2		
Roche Percee	1523/66	1962	SE 33-1-6-W2	153.8	2	Highway Campground	
Rosetown	1523/66	1965	NW 2-30-15-W3	17.6	2	Highway Campground	
Round Lake	29/78	N/A	39-10-W2	260.0	4		
Ruby Lake	1161/77	N/A	46-3-W2	55.0	4		Within a Wildlife Management Unit and a Provincial Forest
St. Walburg	505/74	1966	SE 29-53-22-W3	7.0	4	Picnic Ground	
Saskatchewan River Forks	505/74	1966	NE 13-49-22-W2	41.6	3	Picnic Site	
Secretan	1523/66	1966	SE 27-17-4-W3	4.3	1	Picnic Site	
Sheho	349/78	N/A	SW 16-30-9-W2	4.3	4		
Smeaton	505/74	1966	NW 12-52-20-W2	5.0	4	Picnic Site	
Souris #9	1523/66	1963	NW 25-1-3-W2	14.7	2	Highway Campground	
Spring Fountain	1523/66	1961	32-17-2-W2	11.8	3	Picnic Site	
Squaw Rapids	505/74	1967	S 25-54-10-W2	400.0	3	Picnic Site & Campground	
The "76" Ranch	1523/66	1966	NW 22-12-23-W3	1.7	1	Picnic Site	Contains three Provincial Historic Markers
Touchwood Hills	1523/66	1966	29-27-15-W2	16.7	3	Historic Park	Provincial Historic Park and Protected Area
Unity	505/74	1971	SE 14-40-23-W3	20.7	3	Picnic Site & Campground	
Valeport	1523/66	1962	NW 33-20-21-W2	10.0	2	Picnic Site and Access to Last Mountain Lake	
Valley Centre	505/74	1947	7-21-13-W2	180.0	3	Campground & Picnic Site	
Wascana Trails	7/76	N/A	28-18-21-W2	323.3	2		
Watrous	505/74	1968	2-32-25-W2	17.6	2	Picnic Site & Campground	
West Poplar	505/74	1966	5-1-3-W3	35.9	1	Picnic Site & Campground	
Whitesand River	1523/66	1964	NW 24-29-4-W2	3.8	4	Picnic Site	
Wolseley	1523/66	1964	SE 25-17-11-W2	11.3	3	Picnic Site	

*Key to Habitat Type —
1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest
5. Northern Coniferous Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1979, p. 92.

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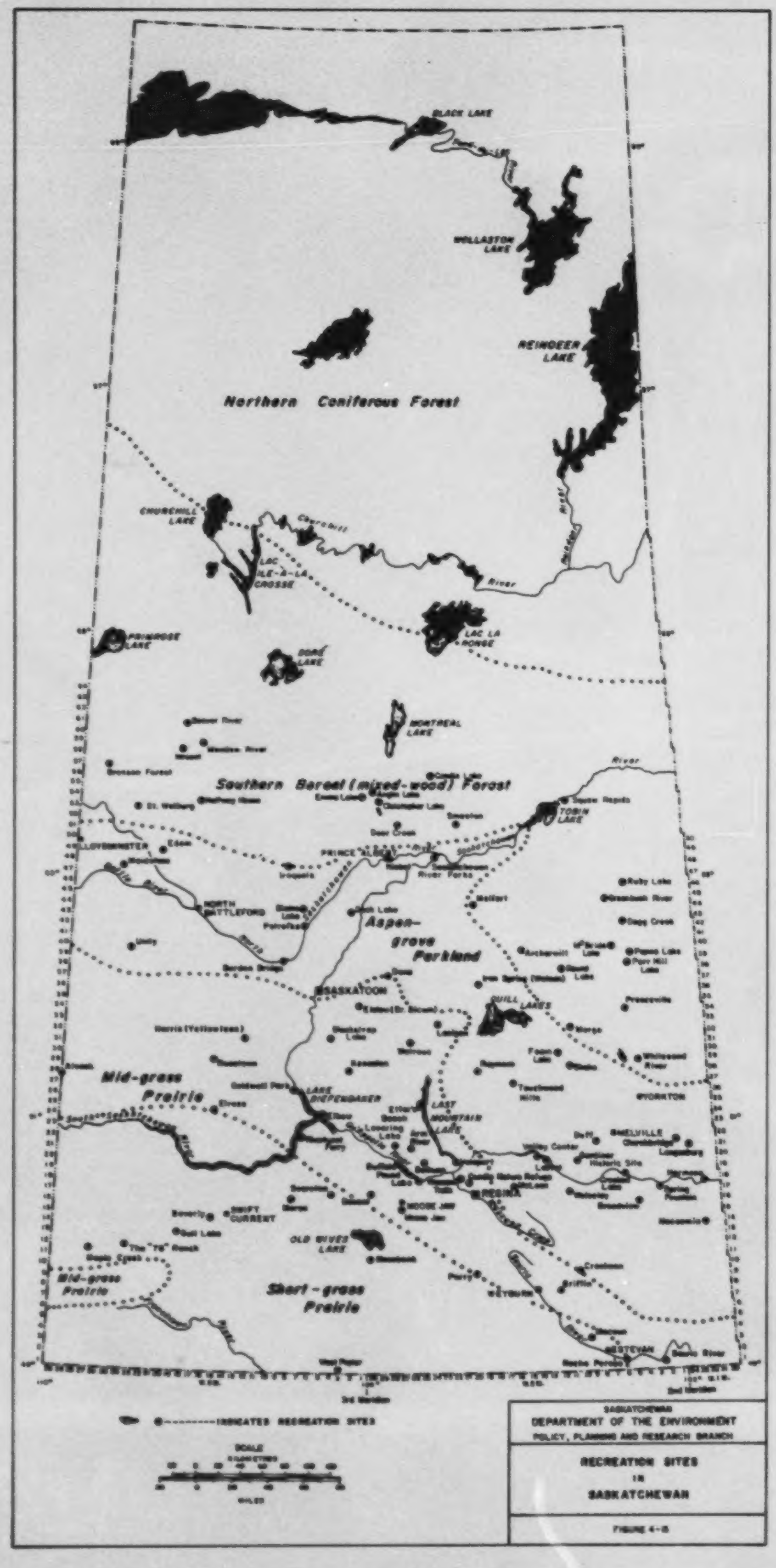
BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill River
LAC ÎLE-À-LA CROSSE
PRIMROSE LAKE
DORÉ LAKE
LAC LA RONGE
MONTREAL LAKE
Beaver River
Meadow Lake
Bronson Forest
Southern Boreal (mixed-wood) Forest
St. Walburg
Emma Lake
Candle Lake
Christopher Lake
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
NORTH BATTLEFORD
Unity
Aspen-grove Parkland
SASKATOON
QUILL LAKES
Mid-grass Prairie
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
MELVILLE
YORKTON
REGINA
MOOSE JAW
SWIFT CURRENT
OLD WIVES LAKE
Mid-grass Prairie
Short-grass Prairie
WEYBURN
ESTEVAN
3rd Meridian
2nd Meridian
INDICATES RECREATION SITES
SCALE
KILOMETRES
MILES

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RECREATION SITES
IN
SASKATCHEWAN

FIGURE 4-8

Recreation sites are administered by the Department of Tourism and Renewable Resources and the Department of Northern Saskatchewan. A majority of the designated sites are located in the Regina and Saskatoon areas. Most sites are smaller than 160 acres.

(v) Cottage lands and cottage subdivisions

The 1971 Census of Canada indicates that there were 395,190 vacation homes or cottages in Canada, 3.3 per cent of which were owned or rented by Saskatchewan residents. Of these 13,200 cottages, 11,290 were owned and 1,935 were rented. Table 4-47 presents additional information on cottages owned and rented by residents of Saskatchewan. It should be noted that these cottages are not necessarily located in Saskatchewan.

A recreation inventory conducted by the Department of Tourism and Renewable Resources in 1970 surveyed 222 cottage areas in the province. This inventory, although not entirely complete, indicated that cottage subdivisions occupied over 5,800 acres and had more than 10,340 cottages and 5,930 additional cottage lots.

Most cottage lands and subdivisions in Saskatchewan have developed in a ribbon or linear dimension parallel to a shoreline. Thus most cottages have a waterfront location. Lots not located on the shoreline are thought of as less desirable. This is the case in the Qu'Appelle Valley which contained at least 5,556 cottages in 1976. These cottages are almost entirely owned by residents of the basin. About 60 per cent of the cottages in the Qu'Appelle Valley are owned by Regina residents and 13 per cent by Moose Jaw residents. Melville and Grenfell (the main origins of cottage owners at Round and Crooked Lakes) with 3.4 per cent and 2.2 per cent, respectively, rank third and fourth. Table 4-48 shows the number of cottages at each of the lakes in the Qu'Appelle Valley. Last Mountain Lake accounts for 50 per cent of all cottages, the Fishing Lakes account for a third, and Round and Crooked Lakes together account for 12 per cent. The remainder are at Buffalo Pound Lake. Demand is greatest for cottages on the lakes closest to cities, particularly Regina. Since the lakes closest to Regina are already heavily developed, new areas for cottaging must be found. The northern half of Last Mountain Lake and Lake Diefenbaker will likely increase in popularity as the other lakes either become less desirable or prohibited by land use control.

Table 4-47

Vacation homes owned by Saskatchewan residents 1971

	Total	Owned	Rented
Canada	395,190	294,885	100,305
Saskatchewan	13,220	11,285	1,935
Cities			
— Moose Jaw	475	405	70
— North Battleford	480	395	85
— Prince Albert	930	790	140
— Regina	2,960	2,425	535
— Saskatoon	1,990	1,665	325
— Swift Current	145	135	15
— Yorkton	185	145	30

Source: Statistics Canada, *Housing — Household Facilities*, 1971 Census of Canada, Catalogue 93-737, Volume II, Part 4, Ottawa, December, 1973, pp. 22-1, 22-12 and 23-5 to 23-10.

Table 4-48

Numbers of cottages in relation to lake size, Qu'Appelle Valley region

	Estimated number of cottages (1976)	Surface area (acres)	Surface area per cottage (in acres)
Lake Diefenbaker	129	108,000	837.2
Buffalo Pound Lake	579	7,280	12.6
Last Mountain Lake — Total	2,659	51,000	19.2
— south end to Pelican Point	1,772	5,100	2.9
— Pelican Pt. to Maple Grove	684	9,950	14.5
— north of Maple Grove	203	35,950	117.1
Fishing Lakes — Total	1,567	14,000	8.9
— Pasqua Lake	246	5,000	20.3
— Echo Lake	489	3,100	6.3
— Mission Lake	97	1,900	19.6
— Katepwa Lake	735	4,000	5.4
Crooked Lake	447	3,700	8.3
Round Lake	175	2,710	15.5
Total	5,556	186,690	33.6
Total (excluding Lake Diefenbaker)	5,427	78,690	14.5

Source: Saskatchewan Department of Tourism and Renewable Resources, *Tourism and Recreation Development Strategies for the Qu'Appelle Valley*, September, 1978, p. 35.

Another major recreational complex is located in the Emma-Christopher Lake area. Emma Lake covers 4,600 acres. Of the 50 km of shoreline, over 16 km are developed. Of the 1,874 cottage lots at Emma Lake in 1974, 1,567 were occupied. Christopher Lake occupies 1,750 acres and has a shoreline length of 135 km, of which 55 km are developed.

As of September, 1975, there were 1,645 cottage lot leases in Saskatchewan provincial parks. Of these, 662 were waterfront lots. Moose Mountain Provincial Park had the greatest number of cottage lot leases (451) and The Battlefords Provincial Park the least (42). Other provincial parks which support cottages are: Cypress Hills, Duck Mountain, Good Spirit, Greenwater Lake, Lac La Ronge, Meadow Lake, Nipawin and Pike Lake.

(vi) Institutional camps

A 1973 recreation facility inventory identified 63 institutional camps with a total area of at least 800 acres. These camps had an accommodation capacity of 4,803 persons.

(vii) Outfitters' camps

During 1978 there were 66 licensed hunting and fishing outfitters operating primarily in the northern part of the province. The number of camps these outfitters run is unknown, but it is known that some outfitters run more than one camp. In addition, 283 hunting guides were licensed in 1978 compared to 223 licensed in 1977. Outfitters provide services such as trip planning, transportation, lodging, fishing, and canoeing equipment.

(viii) Other commercial recreational land

In 1970 the Saskatchewan Recreational Facilities Inventory indicated that there were:

- six amusement parks
- 233 boat access sites (142 publicly owned, 91 privately owned) with 648 boats available for rent
- 65 privately owned camping areas with 420 electrified and 767 non-electrified sites
- 15 equestrian sites using either trails or pasture
- 170 golf courses (109 public and 61 private) composed of:

9-hole sand greens	123
9-hole grass greens	10
18-hole sand greens	8
18-hole grass greens	11
miniature golf or driving ranges	18

- 667 indoor sport sites composed of:

gymnasiums	42
curling rinks	225
skating rinks	135
curling and skating rink complexes	126
other (billiard halls, shooting ranges, etc.)	139

- 1,029 outdoor sports sites such as ball fields, swimming pools, track and field sites, outdoor rinks, tennis courts, horseshoe pitches, etc.
- 75 outdoor theatre sites, including rodeo grounds, grandstands, drive-in theatres, bandstands and amphitheatres
- 26 winter sports sites, including sled runs, snowmobile grounds, toboggan slides and ski slopes

3. Revenue

(i) Provincial parks

(a) Entry permits

Revenue from the 139,315 daily and seasonal permits issued in provincial parks in 1977 was $421,904. Permits cost $2.00 and $5.00 respectively.

(b) Camping permits

Revenue from the 97,500 camping permits issued in 1977 was $490,425. Camping permits vary from $2.00 to $5.00 depending on the level of service. Table 4-49 presents information on park entry and camping permit revenue at provincial parks for 1976 and 1977.

(ii) Recreation areas

(a) Entry permits

Revenue from daily (3,226) and seasonal (2,497) entry permits in 1977 was $17,961, all issued at Blackstrap Recreation Area.

(b) Camping permits

Revenue from the 28,056 camping permits issued in 1977 was $131,646. Table 4-50 presents information on park entry and camping permit revenue at recreation areas for 1976 and 1977.

(iii) Campgrounds

(a) Entry permits

Revenue from the 3,625 Trans-Canada Highway campground entry permits issued in 1977 was $9,645.

(b) Camping permits

Revenue from the 35,181 camping permits issued at campgrounds in 1977 was $138,588. Table 4-51 presents information on park entry and camping permit revenue at Trans-Canada Highway campgrounds and provincial campgrounds for 1976-77.

Table 4-49

Entry and camping permit revenue from provincial parks 1976 and 1977

Park	Entry permit revenue		Camping permit revenue		Total	
	1976	1977	1976	1977	1976	1977
Buffalo Pound	$37,618	$35,746	$31,479	$31,062	$69,097	$66,808
Cypress Hills	40,071	44,108	53,697	55,482	93,768	99,590
Danielson	—	—	5,001	5,841	5,001	5,841
Douglas	—	—	6,630	7,497	6,630	4,497
Duck Mountain	34,794	34,518	38,484	38,676	73,278	73,194
Echo Valley	43,157	41,388	44,910	44,016	88,067	85,404
Good Spirit	21,401	23,939	19,893	20,988	41,294	44,927
Greenwater Lake	23,329	25,399	31,365	35,610	54,694	61,009
Meadow Lake	35,496	44,923	73,842	79,812	109,338	124,735
Moose Mountain	64,197	65,626	54,120	61,866	118,317	127,492
Nipawin	—	—	3,135	2,736	3,135	2,736
Pike Lake	54,429	46,779	18,999	25,926	73,428	72,705
Rowan's Ravine	20,087	21,474	28,425	30,138	48,512	51,612
Sask. Landing	—	—	8,319	9,312	8,319	9,312
The Battlefords	33,168	38,004	37,143	41,463	70,311	79,467
Total	$407,747	$421,904	$455,442	$490,425	$863,189	$912,329

Sources: Saskatchewan Department of Tourism and Renewable Resources, *Provincial Recreation Development Areas*, Parks and Recreation Branch, 1976, p. 36.

Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Tourism and Recreation Planning Branch, 1977, p. 35.

(iv) Provincial recreation development areas

(a) Entry permits

Revenue from daily (74,435) and seasonal (65,880) entry permits issued in provincial recreation development areas in 1977 was $449,510. This represented an increase of 3.1 per cent over 1976.

(b) Camping permits

Camping permit revenue from the 161,412 camping permits issued in 1977 was $760,659, an increase of 6.4 per cent over 1976. Table 4-52 summarizes revenue received from entry and camping permits issued at provincial parks, recreation areas and campgrounds for 1976 and 1977.

(v) Parks and recreation revenue

Revenue from parks and recreation activities exceeded $1,650,000 in 1978, an increase of approximately $170,000 over 1977 and $730,000 over 1976. Table 4-53 presents information on parks and recreation revenue received in Saskatchewan for 1976 to 1978.

(vi) National park revenue

As shown in Table 4-54, revenue from entry fees, camping fees and permit fees for portable cabins amounted to approximately $211,000 in 1977. This was a nine per cent increase over 1976 and one per cent over 1975.

In 1975-76 fees for many activities within the park were increased, and by the end of December revenue had increased by 99 per cent (to $208,000) over revenue received in 1974-75. In 1976-77 and 1977-78, entry fee revenue dropped from 1975. This was due to an increased sale of day passes, and a decrease in the number of seasonal entry permits sold.

4. Employment in outdoor recreation

Because of the wide range and variety of employment in the field of outdoor recreation, an exact breakdown on employment is not available. However, there is some information available regarding employment in tourist-related activities. Employment in the accommodation/food and amusement/recreation sectors in Saskatchewan in 1977 exceeded 15,000. Of this total, 86 per cent of the employment was in the accommodation/food sector and 14 per cent was in the amusement/recreation sector.

Table 4-50

Entry and camping permit revenue from recreation areas 1976 and 1977

Recreation area	Entry permit revenue		Camping permit revenue		Total	
	1976	1977	1976	1977	1976	1977
Anglin Lake	$ —	$ —	$ 5,286	$ 6,174	$ 5,286	$ 6,174
Blackstrap	19,437	17,961	—	—	19,437	17,961
Bronson Forest	—	—	18,942	8,712	18,942	8,712
Candle Lake	—	—	24,888	26,094	24,888	26,094
Chitek Lake	—	—	—	7,368	—	7,368
Christopher Lake	—	—	—	3,984	—	3,984
Coldwell Lake	—	—	—	822	—	822
Denare Beach	—	—	4,101	5,169	4,101	5,169
Dore Lake	—	—	—	714	—	714
East Trout Lake	—	—	—	2,166	—	2,166
Jan Lake	—	—	3,816	4,638	3,816	4,638
Little Bear Lake	—	—	2,601	2,412	2,601	2,412
Makwa	—	—	15,708	16,746	15,708	16,746
Missinipe	—	—	1,488	1,302	1,488	1,302
Murray Point (Emma Lake)	—	—	29,334	28,236	29,334	28,236
Nemeiben Lake	—	—	6,153	5,142	6,153	5,142
Nesslin Lake	—	—	3,537	—	3,537	—
Turtle Lake	—	—	2,517	390	2,517	390
Valley Center	—	—	1,668	2,058	1,668	2,058
Waden Bay	—	—	5,352	4,821	5,352	4,821
Whelan Bay	—	—	3,237	4,698	3,237	4,698
Total	$19,437	$17,961	$129,462	$131,646	$148,899	$149,607

Source: Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Parks and Recreation Branch, 1976, p. 37.

Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Parks and Recreation Branch, 1977, p. 36.

Table 4-51

Entry and camping permit revenue from campgrounds 1976 and 1977

Campground	Entry permit revenue		Camping permit revenue		Total	
	1976	1977	1976	1977	1976	1977
Trans-Canada Sites						
Besant	$4,524	$5,146	$ 18,132	$ 19,881	$ 22,656	$ 25,027
Maple Creek	1,420	1,786	29,091	25,089	30,511	26,875
McLean	1,498	1,674	15,855	16,722	17,353	18,396
Moosomin	1,241	1,039	15,870	15,378	17,111	16,417
Sub-Total	$8,683	$9,645	$ 78,948	$ 77,070	$ 87,631	$ 86,715
Other Provincial Campgrounds						
Borden Bridge	—	—	$ 5,826	$ 5,898	$ 5,826	$ 5,898
David Lair	—	—	8,217	8,349	8,217	8,349
Besnard Lake	—	—	795	2,256	795	2,256
Canoe Lake	—	—	—	1,224	—	1,224
Devil's Lake	—	—	258	294	258	294
Dicken's Lake	—	—	111	192	111	192
English Bay	—	—	378	—	378	—
Green Lake	—	—	300	3,288	300	3,288
La Ronge (Townsite)	—	—	5,658	4,545	5,658	4,545
Little Deer Lake	—	—	156	138	156	138
Mackay Lake	—	—	492	384	492	384
McLennan Lake	—	—	258	198	258	198
Nisbet	—	—	15,069	18,276	15,069	18,276
Otter Rapids	—	—	846	984	846	984
Piprell Lake	—	—	—	1,374	—	1,374
Roche Percee	—	—	1,122	2,598	1,122	2,598
Squaw Rapids	—	—	11,514	11,520	11,514	11,520
Sub-Total	—	—	$ 51,000	$ 61,518	$ 51,000	$ 61,518
Total	$8,683	$9,645	$129,948	$138,588	$138,631	$148,233

Source: Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Parks and Recreation Branch, 1976, p. 38.

Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Parks and Recreation Branch, 1977, p. 37.

Table 4-52

Summary of entry and camping permit revenue 1976 and 1977

	Entry permit revenue		Camping permit revenue		Total	
Area	1976	1977	1976	1977	1976	1977
Provincial parks	$407,747	$421,904	$455,442	$490,425	$863,189	$912,329
Recreation areas	19,437	17,961	129,462	131,646	148,899	149,607
Campgrounds	8,683	9,645	129,948	138,588	138,631	148,233
Total	$435,867	$449,510	$714,852	$760,659	$1,150,719	$1,210,169

Derived from: Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Parks and Recreation Branch, 1976, p. 35.

Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Tourism and Recreation Planning Branch, 1977, p. 34.

Table 4-53

Parks and recreation revenue in Saskatchewan 1976 to 1978

	1976	1977	1978
Lot rentals — park areas	$120,516	$180,499	$225,811
Campers registration permits	343,296	740,055	763,558
Concessions	28,327	37,061	40,509
Park entry permits	317,981	424,980	464,964
Ski tow tickets	72,404	52,783	101,380
Commercial operation	28,327	37,061	40,509
Other	14,863	16,504	18,985

Source: Saskatchewan Department of Tourism and Renewable Resources, personal communication.

Table 4-54

Visitations and revenue from park users at Prince Albert National Park 1972 to 1978*

	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78**
Visitations	166,740	168,947	164,140	140,062	153,152	85,561
Entry fees	$23,884	$27,438	$30,105	$99,386	$62,942	$73,318
Campground						
Users	79,759	77,892	84,172	82,173	93,378	95,570
Camping fees	$57,911	$58,404	$61,200	$86,400	$106,498	$115,728
Shack tents and portable cabins permits	459	454	453	450	448	448
Permit fees	$13,770	$13,620	$13,590	$22,500	$22,400	$22,400

* Revenue does not include fees from all activities within the park.

** Includes winter visitations.

5. Visitations

(i) Provincial recreation development areas

(a) Traffic

Accurate information on visitations to recreation areas is not available. Information given below is derived from traffic counters; it should be emphasized that this information is at best only an estimate.

Recorded visitations to provincial recreation development areas in 1977 were 6,728,668 visitors (1,682,167 vehicles). This was a decrease of 8.2 per cent from 1976. Of this total, provincial parks received 49 per cent of the visitors, recreation areas 31 per cent, campgrounds 16 per cent and picnic grounds five per cent.

(b) Entry permits

In 1977, 263,520 visitors took advantage of 65,880 seasonal entry permits, an increase of 8.9 per cent from 1976. Daily entry permits totalled 73,435, down 8.4 per cent from 1976.

(c) Camping permits

In 1977, 161,412 camping permits were issued in provincial recreation development areas, an increase of 3.2 per cent from 1976.

(ii) Provincial parks

(a) Traffic

Saskatchewan provincial parks were visited by 3,231,636 people (807,909 vehicles) in 1977, a decrease of 8.2 per cent from 1976. Tables 4-55 and 4-56 present information on visitation and the number of vehicles entering provincial parks from 1973 to 1977. The greatest number of visits in 1977 occurred at Moose Mountain Provincial Park (19.48 per cent of the provincial park total); the smallest number occurred at Nipawin Provincial Park (0.7 per cent of the total).

(b) Entry permits

Seasonal entry permits issued in the provincial parks in 1977 totalled 67,298, or 94.5 per cent of the total seasonal entry permits. Using a factor of 4.1 visitors/permit, about 249,192 visitors took advantage of seasonal permits. Of these, the greatest number were issued at Moose Mountain (39,664 visitors; 9,916 permits) and the smallest number were issued at Rowan's Ravine (13,968 visitors; 3,492 permits).

Daily permits sold in provincial parks in 1977 totalled 67,668 (270,672 visitors), 92.1 per cent of the province-wide total of 73,435 daily entry permits (293,740 visitors). This was an 8.4 per cent decrease from the total in 1976.

Danielson, Douglas, Katepwa Point, Lac la Ronge, Nipawin and Saskatchewan Landing Provincial Parks do not issue daily or seasonal entry permits.

Table 4-55
Visitors entering provincial parks 1973 to 1977

Parks	1973	1974	1975	1976	1977
Buffalo Pound	202,796	170,840	154,340	231,380	156,756
Cypress Hills	242,660	228,584	240,552	241,500	255,148
Danielson	51,388	36,112	41,712	58,268	117,700
Douglas	48,492	43,632	51,772	49,372	43,472
Duck Mountain	309,296	347,200	377,044	393,388	368,860
Echo Valley	427,440	310,552	430,204	369,356	203,632
Good Spirit	79,832	91,220	95,964	117,664	103,900
Greenwater Lake	142,400	157,852	175,368	193,420	154,636
Meadow Lake	387,844	331,116	286,968	361,496	389,384
Moose Mountain	529,448	586,900	590,232	674,988	629,560
Nipawin	53,764	38,892	40,184	70,928	22,744
Pike Lake	270,320	187,372	227,224	236,592	184,352
Rowan's Ravine	124,108	97,280	119,256	137,424	161,396
Saskatchewan Landing	91,320	97,320	142,588	164,972	131,196
The Battlefords	178,296	179,708	181,524	220,648	308,900
Total	3,139,820	2,904,580	3,154,932	3,521,396	3,231,636
Per cent change yearly	+15.2	—7.5	+8.6	+11.6	—8.2

Source: Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Tourism and Recreation Planning Branch, 1977, p. 41.

Table 4-56

Vehicles entering provincial parks 1973 to 1977

Park	1973	1974	1975	1976	1977
Buffalo Pound	50,699	42,710	38,585	57,845	39,189
Cypress Hills	60,665	57,146	60,138	60,375	63,787
Danielson	12,847	9,028	10,428	14,567	29,425
Douglas	12,123	10,908	12,943	12,343	10,868
Duck Mountain	77,324	86,800	94,261	98,347	92,215
Echo Valley	106,860	77,638	107,551	92,339	50,908
Good Spirit	19,958	22,805	23,991	29,416	25,975
Greenwater Lake	35,600	39,463	43,842	48,355	38,659
Meadow Lake	96,961	82,779	71,742	90,374	97,346
Moose Mountain	132,362	146,725	147,558	168,747	157,390
Nipawin	13,441	9,723	10,046	17,732	5,686
Pike Lake	67,580	46,843	56,806	59,148	46,088
Rowan's Ravine	31,027	24,320	29,814	34,356	40,349
Saskatchewan Landing	22,934	24,330	35,647	41,243	32,799
The Battlefords	44,574	44,927	45,381	55,162	77,225
Total	784,955	726,145	788,733	880,349	807,909
Per cent change yearly	+15.2	−7.5	+8.6	+11.6	−8.2

Source: Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Tourism and Recreation Planning Branch, 1977, p. 40.

Table 4-57

Camping permits issued in provincial parks 1973 to 1977

Park	1973	1974	1975*	1976	1977
Buffalo Pound	7,085	6,041	—	6,885	6,156
Cypress Hills	9,831	11,377	—	11,328	11,442
Danielson	1,1903	1,178	—	1,431	1,443
Douglas	1,027	1,126	—	1,887	1,584
Duck Mountain	6,125	6,282	—	6,882	7,008
Echo Valley	8,630	3,593	—	9,561	8,895
Good Spirit	3,498	3,469	—	4,443	4,602
Greenwater Lake	3,715	4,285	—	5,697	6,294
Meadow Lake	11,349	12,898	—	14,280	16,143
Moose Mountain	9,054	9,075	—	10,659	11,841
Nipawin	1,002	855	—	1,218	876
Pike Lake	3,374	4,402	—	3,189	4,758
Rowan's Ravine	4,694	4,182	—	5,679	5,853
Saskatchewan Landing	1,083	1,856	—	2,310	2,394
The Battlefords	8,479	8,440	—	7,614	8,211
Total	80,139	84,059	—	92,973	97,500
Per cent change yearly	+17.9	+4.89	—	+9.6	+4.7

* Camping permit analyses were not made for 1975.

Source: Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Tourism and Recreation Planning Branch, 1976 and 1977.

(c) Camping permits

Provincial parks accounted for 97,500 camping permits, 61.6 per cent of the 1977 provincial total. This was an increase of 4.9 per cent over 1976. The largest number were issued at Meadow Lake Provincial Park (16,143 permits) and the smallest number were issued at Nipawin Provincial Park (876 permits). Table 4-57 presents information on camping permits issued in provincial parks from 1973 to 1977.

(iii) Recreation areas

(a) Traffic

Visits to provincial recreation areas in 1977 were up by 19.8 per cent from 1976 to 524,872 vehicles or 2,099,488 visitors. Makwa had the largest number of visits (19.42 per cent), and Nesset Lake had the smallest number of visits (0.22 per cent).

(b) Entry permits

Blackstrap was the only provincial recreation area to issue entry permits. A total of 9,988 visitors took advantage of 2,497 seasonal entry permits in 1977, a decrease of 8.6 per cent from 1976. Daily entry permit purchases decreased 2.15 per cent from 1976 to 3,226 daily entry permits in 1977.

(c) Camping permits

A total of 25,377 camping permits were issued in recreation areas in 1977. This was a decrease of 1,521 permits (5.7 per cent) from 1976.

(iv) Campgrounds

(a) Traffic

Recordings made at campgrounds on the Trans-Canada Highway and the Yellowhead route in 1977 showed a decrease of 1.5 per cent and 2.9 per cent respectively from 1976. Visitation at campgrounds on other highways decreased 17.3 per cent. Table 4-58 presents additional information on vehicles entering Trans-Canada Highway sites for the years 1973 to 1977.

(b) Entry permits

The number of seasonal entry permits issued at Trans-Canada Highway sites in 1977 increased at all sites. The number of daily permits issued decreased by 4.44 per cent.

(c) Camping permits

Of the 161,412 camping permits issued throughout the province in 1977, 22.2 per cent were issued at Trans-Canada Highway campgrounds. Numbers of permits ranged from 6,753 at Maple Creek (down 1,242 permits) to 33 permits at Dickens Lake (up 9 permits).

Purchases of camping permits at Trans-Canada Highway sites decreased 6.4 per cent. Purchases at other provincial sites decreased by 1.0 per cent. Tables 4-59 and 4-60 present information on camping permits issued at Trans-Canada Highway sites and other highway sites in the province.

(v) Picnic grounds

Picnic grounds accounted for 77,111 vehicles and 308,444 visitors in 1977 or five per cent of the total provincial visitation of 1,682,167 vehicles and 6,728,668 visitors. This was a decrease of 126,772 visitors and 31,692 vehicles from 1976.

(vi) Winter recreation facilities

White Track Winter Resort recorded skier attendance of 10,553 during 62 ski days in 1977-78 compared to 6,891 during 45 ski days in 1976-77. Mount Blackstrap recorded 13,829 skiers during 59 ski days in 1977-78 compared to 9,751 during 35 days in 1976-77. Cypress Hills Ski Resort was in operation for 36 days in 1977-78 with 6,277 skiers participating.

Table 4-58

Vehicles entering Trans-Canada Highway campgrounds 1973-1977

Campground	1973	1974	1975	1976	1977
Besant	25,820	21,724	16,347	14,870	25,849
Maple Creek	28,777	28,641	29,265	28,750	22,628
McLean	27,662	14,707	9,859	10,167	10,750
Moosomin	19,085	15,766	14,831	16,953	13,799
Total	101,344	80,838	70,302	70,740	73,026
Per cent change yearly	+10.5	–20.2	–13.0	+0.6	+3.2

Source: Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Tourism and Recreation Planning Branch, 1977, p. 42.

Table 4-59

Camping permits issued in Trans-Canada Highway campgrounds 1973 to 1977

Campground	1973	1974	1975*	1976	1977
Besant	7,760	7,138	—	4,887	5,166
Maple Creek	9,520	8,711	—	7,995	6,753
McLean	6,528	6,057	—	4,266	4,206
Moosomin	6,249	5,513	—	4,383	4,035
Total	30,057	28,479	—	21,531	20,160
Per cent change yearly	+6.4	—5.25	—	—24.4	—6.4

* Camping permit analyses were not made for 1975.

Source: Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Tourism and Recreation Planning Branch, 1974 and 1977.

Table 4-60

Camping permits issued in provincial highway campgrounds 1973 to 1977

Campground	1973	1974	1975*	1976	1977
Besnard Lake	—	—	—	156	513
Borden Bridge	3,245	2,782	—	2,337	2,274
David Laird	3,757	3,758	—	4,107	4,119
Devils Lake	—	—	—	60	84
Dickens Lake	—	—	—	24	33
Green Lake	—	—	—	132	615
La Ronge	—	—	—	993	984
Little Deer Lake	—	—	—	33	36
Melfort	299	284	—	—	—
McKay Lake	—	—	—	90	84
McLennen Lake	—	—	—	69	57
Nisbit	2,086	2,519	—	3,006	3,009
Otter Rapids	—	—	—	249	333
Roche Percee	—	406	—	486	663
Squaw Rapids	2,115	2,407	—	2,277	2,127
Total	10,602	12,156	—	14,019	15,021
Per cent change yearly	+5.90	+14.66	—	+13.39	+6.78

* Camping permit analyses were not made for 1975.

Source: Saskatchewan Department of Tourism and Renewable Resources, *Visitation Report Provincial Recreation Development Areas*, Tourism and Recreation Planning Branch, 1974, p. 43, and 1977, p. 33.

Table 4-61

Total tourism expenditures in Saskatchewan 1974 to 1977

Expenditures by	1974	1975	1976	1977
Sask. residents	$262,186,000	$346,000,000	$378,000,000	$393,000,000
Non-Sask. residents	51,860,000	65,000,000	74,000,000	81,000,000
U.S. visitors		12,000,000	16,200,000	18,100,000
Foreign visitors		4,300,000	7,000,000	6,000,000
Total	$314,046,000	$427,300,000	$472,500,000	$498,100,000

Table 4-62

Number of Saskatchewan households owning selected items of recreational equipment in 1976

Recreational equipment	No. in thousands
total households	279
snow skis	32
snowmobiles	50
adult bicycles	116
vacation homes	15
overnight camping equipment	30
tent trailers	19
travel trailers	22
truck campers	11
other	4
any one or more types of camping equipment	81
canoes	9
rowboats	—
sailboats	—
outboard	30
other	—
total households with boats	42

Source: Statistics Canada, *Travel, Tourism and Outdoor Recreation — A Statistical Digest*, Catalogue 66-202, Ottawa, January, 1978, pp. 176-179.

(vii) National parks

Prince Albert National Park had approximately 152,000 visits in 1977-78, a one per cent decline in visits from 1976-77. In 1977-78 winter visitations were recorded for the first time; total visitation for summer and winter was 185,500.

In 1977-78 about 95,500 campground permits were issued, an increase of two per cent from 1976-77.

Permits issued for shack tents/portable cabins in 1977-78 (448) remained almost the same as the numbers issued in 1976-77 and 1975-76 (488 and 450 respectively).

Table 4-54 presents additional information on visits to and users of Prince Albert National Park.

Table 4-63

Percentage of Saskatchewan residents participating in selected outdoor recreational activities in 1969

Activity	Per cent
Water sports	
swimming	32
power boating	23
canoeing	9
sailing	4
water skiing	7
Winter sports	
snow skiing	4
snowmobiling	26
snow sledding, tobogganing, sleighing	11
ice skating	17
Fishing, hunting	
fishing	*
hunting	19
Other sports	
golfing	17
horseback riding	10
bicycling	9
tennis	4
Camping, hiking, climbing	
tent camping	13
trailer camping	12
pick-up camper	3
climbing	14
hiking	29
Other less active pursuits	
nature study and bird watching	9
outdoor photography	20
historic sites/parks	43
other kinds of parks	49
driving for pleasure	66
sightseeing	52
picnics/cookouts	69
relax and get away from it all	*
looking at scenery	*

* Activity not included in questionnaire.

Source: Statistics Canada, *Travel, Tourism and Outdoor Recreation — A Statistical Digest*, Catalogue 66-202, Ottawa, October, 1972, p. 90.

(viii) Tourists in Saskatchewan

The importance of tourism to Saskatchewan is evident when the annual expenditures of tourists are considered. Total expenditures amounted to $498.1 million in 1977 and $472.5 million in 1976. Preliminary estimates for 1978 indicate that expenditures should be even greater. Table 4-61 gives a breakdown of tourism expenditures in Saskatchewan for the years 1974 to 1977.

Table 4-62 presents information on the number of Saskatchewan households owning selected items of recreational equipment in 1976.

Table 4-63 presents information on participation of Saskatchewan residents in various outdoor recreational activities in 1969. Activities with the greatest participation were picnics/cookouts (69 per cent), driving for pleasure (66 per cent), sightseeing (52 per cent), visiting other kinds of parks (49 per cent) and visiting historic sites/parks (43 per cent).

F. Historic, cultural and heritage lands[6]

1. Legislation

Legislation discussed in this section will deal primarily with protected areas, national historic areas and provincial historic areas. Six provincial statutes and two federal Acts will be discussed (see Table 4-64).

Table 4-64

Legislation relevant to historic, cultural and heritage lands in Saskatchewan

Saskatchewan legislation

The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act
The Provincial Lands Act
The Forest Act
The Mineral Resources Act
The Saskatchewan Heritage Act
The Planning and Development Act
The Cemeteries Act

Federal legislation

National Parks Act
Historic Sites and Monuments Act

(i) Saskatchewan legislation

The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act, R.S.S. 1978, c.P-34

Under this Act the Lieutenant-Governor in Council may, area within the province as a protected area for the purpose of protecting and preserving objects of beauty, on the recommendation of the Minister, constitute any fossil remains, burial-places, burial-mounds, paintings or carvings on rock, or other objects (animate or inanimate) of a geological, ethnological, archaeological, palaeontological, zoological, botanical, historical or other scientific interest or significance.

The Act also determines how protected areas may be used, prohibits the removal and destruction of objects with historical or scientific interest, and provides for operation of facilities for the convenience of the public.

The Act allows the Lieutennant-Governor in Council to make regulations for administration and operation of provincial parks. These regulations also apply to protected areas. They contain sections on leases and permits, building requirements, conduct of persons, institutional and other camps, camping, boats and boathouses, swimming and fishing, business operations, grazing, hay, timber and traffic.

The Provincial Lands Act, R.S.S. 1978, c.P-31

This Act provides for establishment of historic sites by setting aside lands for this purpose.

The Forest Act, R.S.S. 1978, c.F-19

This Act allows for areas of historical interest to be withdrawn from provincial forests. Regulations made pursuant to this Act allow for reservation of timber in protected areas.

The Mineral Resources Act, R.S.S. 1978, c.M-16

Under provisions of this Act, prospecting, staking out and disposition rights have been withdrawn from two protected areas, Smith Narrows and Wildcat Hills Wilderness Area. All other protected areas are not reserved from mineral exploration.

The Saskatchewan Heritage Act, R.S.S. 1978, c.S-22

The Saskatchewan Heritage Act was passed in 1975 for the purpose of co-ordinating the orderly development, preservation, study, interpretation and promotion of appreciation of heritage property in Saskatchewan. Under this Act, the Minister responsible may acquire any heritage property by purchase, donation, loan, lease or any other means. The Act provides for appointment of the Saskatchewan Heritage Advisory Board to advise the Minister on any matter relating to conservation, protection and preservation of the heritage of Saskatchewan. The Act is administered by the Department of Culture and Youth.

This Act defines heritage property as property, whether a work of man or nature, that is primarily of interest for its archaeolological, historical, cultural, scientific, or aesthetic value. To date, no heritage properties have been designated under this Act.

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[6] The material for this section was derived primarily from:

Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January, 1976, pp. 37-61.

Saskatchewan Department of the Environment, *Saskatchewan Environmental Legislation*, Policy, Planning and Research Branch, November, 1976, pp. 89-96 and 158-160.

Heritage property may be designated as protected property under the Act for the purpose of preserving or salvaging the property. The only protected properties designated to date are four buildings in Regina. These are the Land Titles Building, head office of the Saskatchewan Government Insurance Office, Bank of Commerce Building (1736 Scarth Street) and the Legislative Building.

(ii) Federal legislation

National Parks Act, R.S.C. 1970, c.N-13

Under this Act, the Governor in Council may set apart as a National Historic Park any land to which the title is vested in Her Majesty, in order to:

(a) commemorate an historic event of national importance

(b) preserve any historic landmark or any object of historic, pre-historic or scientific interest of national importance.

He may also from time to time make any changes in the areas so set aside that he may consider expedient.

Historic Sites and Monuments Act, R.S.C. 1970, c.H-6

This Act is administered by the Department of Indian Affairs and Northern Development.

Under this Act, the Minister may:

(a) by means of plaques or other signs or in any other suitable manner, mark or otherwise commemorate historic places

(b) make agreements with any persons for making or commemorating historic places pursuant to this Act and for the care and preservation of any places so marked or commemorated

(c) with the approval of the Governor in Council, establish historic museums

(d) acquire any historic places, lands for historic museums or interest therein by purchase, lease, or otherwise

(e) provide for the administration, preservation and maintenance of any historic places acquired or historic museums established pursuant to this Act.

2. Lands designated for historic, cultural and heritage purposes

(i) Protected areas

A total of 21 protected areas, covering 48,636.5 acres, are presently established in the province. Information on these areas is given in Table 4-65, and their locations are shown in Figure 4-16.

There have been three phases in the history of protected areas in Saskatchewan. During the first phase, 1954 to 1964, all protected areas designated (a total of 26) were of historical or archaeological significance. Most of these sites were simply roadside markers; 14 were less than one acre in size. Many of these historical-archaeological sites were designated to prevent the unauthorized removal of objects of historical or archaeological value. Three of these protected areas, Besant-Midden Historical Site, Steele's Narrows Historic Site and Touchwood Hills Trading Post Site, have been developed for the use of the public in general.

Five historical-archaeological protected areas are associated with other designations. The Bison Drive Site is within a provincial forest, and the Walter Felt Bison Drive is within an association community pasture. Steele's Narrows Historic Site is also a provincial historic park and contains a national historic site. The protected area at the Touchwood Hills Trading Post Site is designated as both a recreation site and a provincial historic park. Cannington Manor, which was established in 1965 and designated a recreation site in 1968, is managed as an historic park.

The second phase in the history of protected areas began in 1964 and continued until 1974. This phase was marked by a trend toward the designation of areas to preserve "natural" or "wilderness" areas of the province. Three such areas have been established: Waskwei River, Maurice Street Wildlife Sanctuary and Wildcat Hills Wilderness Area. All three of these protected areas are larger than any of the areas designated prior to 1964. Wildcat Hills Wilderness Area, the largest, covers over 40,000 acres.

The third phase in the development of protected areas began in 1974 with the passing of *Bill 66*, an Act to amend *The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act*. This Act rescinded all previous Orders-in-Council in reference to protected areas and then reinstated the 21 shown in Table 4-65 The purpose of this amendment was to provide for stronger administrative protection.

(ii) National historic areas

The Government of Canada has the power to establish two types of historic areas: national historic parks and national historic sites. National historic parks are areas which have both major historical significance and a size suitable for development as a park with interpretive displays. National historic parks may lack one of these necessary conditions or may be potential national historic parks in the planning or development stage. The National Historic Sites Service of the Department of Indian Affairs and Northern Development administers all national historic areas.

(a) National historic parks

National historic parks are managed primarily to preserve and protect areas of national historic interest from incompatible development, and to describe the history of the sites to visitors through interpretive displays. The parks are managed exclusively as day-use facilities.

Table 4-65

Protected areas

Name	Order-in-Council number	Date est.	General location (Sec-Twp-Rge-Mer)	Area (acres)	Land ownership	Habitat type¹	Purpose of designation	Other designations
Anderson Island	Bill 66/74	1975	53°47'N 103°4'W	18,000	Crown	4	preserve natural state of area	Within a Provincial Forest
Besant-Midden Historical Site	1493/54 Bill 66/74	1954	SW 29-17-29-W2	37.8	Crown	2	archaeological site	
Bison Drive Site	507/64 Bill 66/74	1964	SW 30-5-16-W3	40	Crown	1	archaeological site	Within a PFRA Community Pasture
Cannington Manor	Bill 66/74	1965	W 14-9-1-W2	25	Crown	3	site of 19th century settlement	Provincial Historic marker
Fort Black Historic Site	1399/58 Bill 66/74	1958	74-12-W3	2.3	Crown	4	archaeological site	Within a Provincial Forest
Fort Carlton Historic Site	Bill 66/74	1957	9-45-4-W3	340	Crown	3	Historic Site	Within a Provincial Historic Park
Fort Pitt	Bill 66/74	1973	8-53-26-W3	25.4	Crown	4	Hudson's Bay Company Post	Provincial Historic Park
Glen Ewen Burial Mound	Bill 66/74	1964	NW 4-1-34-W1	14.7	Crown	2	archaeological site	
Gull Lake Archaeological Site	Bill 66/74	1971	SW 31-12-19-W3	160	Crown	1	archaeological site	
Hickson-Maribelli Lake	Bill 66/74	1970	56°6'N 104°27'W	181	Crown	5	archaeological site	Within a Provincial Forest
Last Mountain House	Bill 66/74	1964	NE 8-21-21-W2	145	Crown	2	former trading post	Provincial Historic Park
Maurice Street Wildlife Sanctuary	Bill 66/74	1968	1-52-14-W2	422	Crown	3	preserve natural state of area	
Matador Grasslands	Bill 66/74	1967	10, 15, 16-20-13-W3	1,922	Crown	1	preserve natural state of area	research and teaching area
Pine Island Trading Post	Bill 66/74	1964	NE 7, 18-49-21-W3	94	Crown	3	archaeological site	
Steele's Narrows Historic Site	Bill 66/74	1957	26-58-23-W3	40	Crown	4	Historic site	Provincial Historic Park and contains a National Historic Site
Thomas Battersby Wildlife Protected Area	Bill 66/74	1975	18-49-9-W2	640	Crown	3	Historic Natural Site	Park and contains a National Historic Site
Touchwood Hills Hudson Bay Company Trading Post	Bill 66/74	1964	S 29-27-15-W2	16.7	Crown	3	Historic Site	Recreation Site and Provincial Historic Park
Walter Felt Site	Bill 66/74	1964	SW 16-16-1-W3	2.9	Crown	1	archaeological site	Within an Association Community Pasture
Waskwei River	Bill 66/74	1964	51-1-W2	2,240	Crown	4	protect stands of virgin white spruce	Within a Wildlife Management Unit and within a Provincial Forest
Wildcat Hills Wilderness Area	Bill 66/74	1971	45-4-W2	40,077	Crown	4	Natural Wilderness Area	Within a Wildlife Mangaement Unit and within a Provincial Forest
Wood Mountain North West Mounted Police Site	Bill 66/74	1957	SW 20-4-3-W3	13.6	Crown	1	Historic Park	Within a Provincial Historic Park

¹Key to Major Habitat Types —
1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest
5. Northern Coniferous Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January, 1976.

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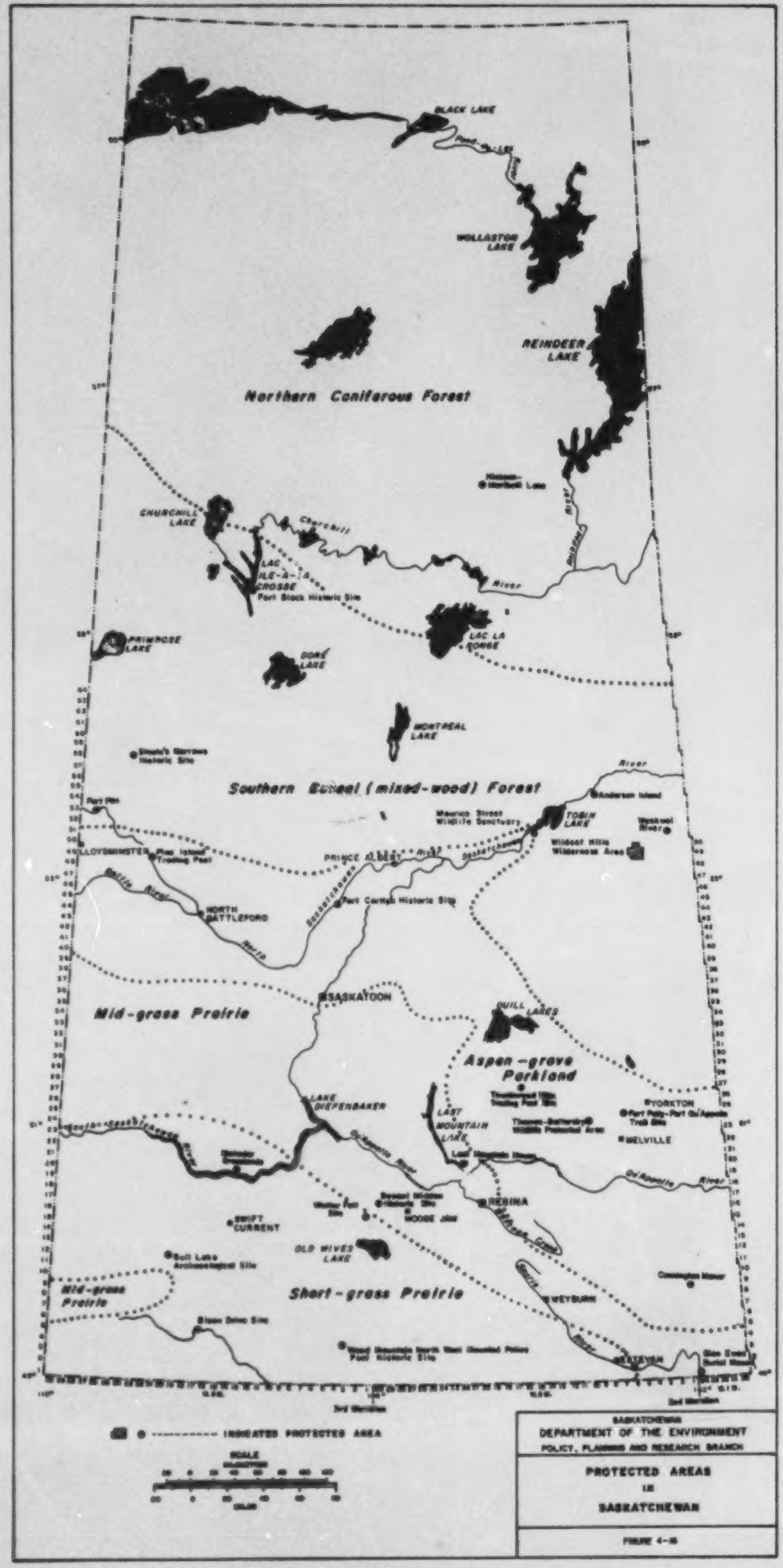
BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill
River
LAC ILE-A-LA CROSSE
PRIMROSE LAKE
DORÉ LAKE
LAC LA RONGE
MONTREAL LAKE
Southern Boreal (mixed-wood) Forest
TOBIN LAKE
Anderson Island
Wildcat Hills Wilderness Area
Maurice Street Wildlife Sanctuary
LLOYDMINSTER
Fort Pitt
Battle River
NORTH BATTLEFORD
PRINCE ALBERT
Saskatchewan
Fort Carlton Historic Site
SASKATOON
Mid-grass Prairie
QUILL LAKES
Aspen-grove Parkland
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
YORKTON
MELVILLE
Qu'Appelle River
REGINA
MOOSE JAW
SWIFT CURRENT
OLD WIVES LAKE
Salt Lake Archaeological Site
Short-grass Prairie
WEYBURN
ESTEVAN
2nd Meridian
3rd Meridian
INDICATES PROTECTED AREA
SCALE

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

PROTECTED AREAS
IN
SASKATCHEWAN

FIGURE 4-16

Table 4-66

National historic parks and sites

Name	Date est.	General location	Area (acres)	Land ownership	Habitat type*	Purpose of designation	Other designations
Arthur Silver Morton	1959	University of Saskatchewan Campus, Saskatoon	Plaque only	Patented	3	Teacher helped initiate historic sites program	
Batoche	1924	43-1-W3	500	Crown	3	Battle site of 1885 North West Rebellion	Contains a Provincial Historic Marker and another National Historic Site
Batoche Battlefield	1947	17-43-1-W3	Plaque and monument	Crown	3	Battle site of 1885 North West Rebellion	Within a National Historic Park
Battleford	1951	Town of Battleford	Plaque only	Crown	3	Summarizes information on the National Historic Park	
Battle of Cut Knife Hill	1952	Poundmaker Indian Reserve No. 114	<1	Indian Reserve	3	Site of a battle between government forces and Indians people under Chief Poundmaker	
Big Bear	1973	Fort Pitt Prov. Historic Park	Plaque and cairn	Province of Saskatchewan	4	Noted warrior and hunter, leader of the Plains Cree	
Chief Justice Sir F. W. G. Haultain	1954	Wascana Centre, Regina	Plaque and monument	Patented	2	Member of North West Territories Council and Assembley	
Chief Poundmaker	1972	Poundmaker Indian Reserve	Plaque and monument	Indian Reserve	3	Outstanding Creek Chief spokesman	
Cumberland House	1938	18-57-2-W2	<1	Crown	4	First Inland Hudson's Bay Company Post	Within a Provincial Forest
Cypress Hills Massacre	1973	Fort Walsh National Historic Park	Plaque and monument	Crown	2	Party of white men killed several Indians while searching for stolen horses. NWMP arrested three although no convictions resulted. Efforts of the police convinced the Indians of the impartiality of the force	Within a National Historic Site
Dominion Telegraph Office	1971	Town of Humboldt	Plaque and monument	Town of Humboldt	3	Junction point of the Dominion Telegraph	
Duck Lake Battlefield	1950	Okemasis and Beardy Indian Reserves Nos. 96 and 97	<1	Indian Reserve	3	First battle site of 1885 North West Rebellion	
Father Louis-Pierre Gravel	1958	Town of Gravelbourg	Monument and plaque only	Town of Gravelbourg	1	Missionary and Colonizer	
First Eastward Crossing of the North West Passage	1950	RCMP Depot, Regina	Monument and plaque only	Crown	2	Commemorates voyage of Patrol Vessel St. Roch	
Fish Creek Battlefield	1935	24-41-2-W2	125	Crown	3	Battle Site of 1885 North West Rebellion	Within a wildlife management unit and a Provincial Forest
Fort-a-la-Corne	1951	Town of Kinistino	Monument and plaque only	Town of Kinistino	3	First fur trade post in Saskatchewan	
Fort Battleford National Historic Park	1951	Town of Battleford	40	Crown	3	North West Mounted Police Fort	Contains two National Historic Sites
Fort Esperance	1964	32-17-30-W1	3.7	Crown	3	North West Company Trading Post	
Fort Livingstone	1924	8-34-32-W1	120	Crown	4	North West Mounted Police Post	
Fort Pelly	1971	30-32-32-W1	5	Crown	4	Hudson's Bay Company Trading Post	
Fort Pitt	1973	Fort Pitt Provincial Historic Park	Plaque and cairn	Province of Saskatchewan	4	Hudson's Bay Company Post	
Fort Qu'Appelle	1968	Town of Fort Qu'Appelle	Plaque and monument	Patented	3	Hudson's Bay Company Trading Post	
Fort Walsh National Historic Park	1972	7-29-W3	1,600	Crown	2	North West Mounted Police Fort	Contains four National Historic Sites

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Table 4-66 (continued)

National historic parks and sites

Name	Date est.	General location	Area (acres)	Land ownership	Habitat type'	Purpose of designation	Other designations
Fort Walsh	1926	Fort Walsh National Historic Park	Plaque and monument	Crown	2		Within a National Historic Park
Frenchman Butte	1965	35-53-25-W3	1814	Crown	4	Site of skirmish between Indian people and government forces in 1885	
George Exton Lloyd	1953	Town of Lloydminster	<1	Crown	3	Chaplin during North West Rebellion and Rector in Lloydminster	
Government House, Battleford	1976	Battleford	Monument and plaque only	Oblates of Mary Immaculate	3	Capital of North West Territories 1878-1883	
Inauguration of Saskatchewan	1952	Victoria Park, Regina	Monument and plaque only	City of Regina	2	Commemorating the 1905 provincial inauguration ceremony	
Indian Treaty No. 6	1930	NW 11-45-4-W3	<1	Crown	3	Site of 1876 Treaty negotiations	
James Alexander McPhail	1976	Wheat Pool Building, Regina	Monument and plaque only	Saskatchewan Wheat Pool	2	First President of Saskatchewan Wheat Pool	
James Garfield Gardiner	1978	Melville	Monument and plaque only	Rural Municipality	3	One of the most successful politicians in Western Canada	
James Morrow Walsh	1975	Fort Walsh National Historic Park	Monument and plaque only	Crown	2		Within a National Historic Park
Jean Louis Legare	1968	Town of Willow Bunch	Monument and plaque only	Patented	1	Early settler, negotiated with Sioux under Sitting Bull	
Keyhole Castle	1977	Prince Albert	<1	Crown	3	Architecturally significant	
Louis de la Corne	1975	Kinistino	Monument and plaque only	Town of Kinistino	3	Soldier and fur trader	
Methye Passage	1974	La Loche	Plaque and cairn	Province of Saskatchewan	5		Within a Provincial Forest
Motherwell Homestead	1966	NE 14-20-11-W2	8.4	Crown	3	Founder of Territorial Grain Growers' Association and Minister of Agriculture	
Nicholas Flood Davin	1954	Wascana Centre, Regina	Monument and plaque only	Patented	2	First Member of Parliament for West Assiniboia	
North West Mounted Police	1976	Fort Walsh National Historic Park	Monument and plaque only	Crown	2	Establishment of the force	Within a National Historic Park
North West Rebellion	1924	Town of Battleford	Monument and plaque only	Patented	3	Site of Chief Poundmaker's Surrender	
Paul Kane	1962	Town of Battleford	Plaque only	Crown	3	Artist	Within a National Historic Park
Peter Fidler	1965	Town of Meadow Lake	Monument only	Crown	4	Explorer, employee of Hudson Bay Company	
Peter Pond	1953	NE 3-49-27-W2	1.3	Crown	3	Explorer, and independent fur trader	
Prefabricated Banks	1977	Watson	Plaque only	Town of Watson	3	Architecturally significant	
Senator J. H. Ross	1954	Wascana Centre, Regina	Plaque and monument only	Patented	2	Member of North West Territories Council and assembly	
Steele's Narrows	1968	26-58-23-W3	Monument and plaque only	Crown	4	Site of last military engagement on Canadian soil	Within both a Protected Area and a Provincial Historic Park
Territorial Grain Growers' Association	1955	Town of Indian Head	<1	Patented	3	Commemorates beginning of first successful farmers organization	

'Key to Major Habitat Types —
1. Short-grass prairie
2. Mid-grass prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest

Source: Saskatchewan Department of the Environment. *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 48.

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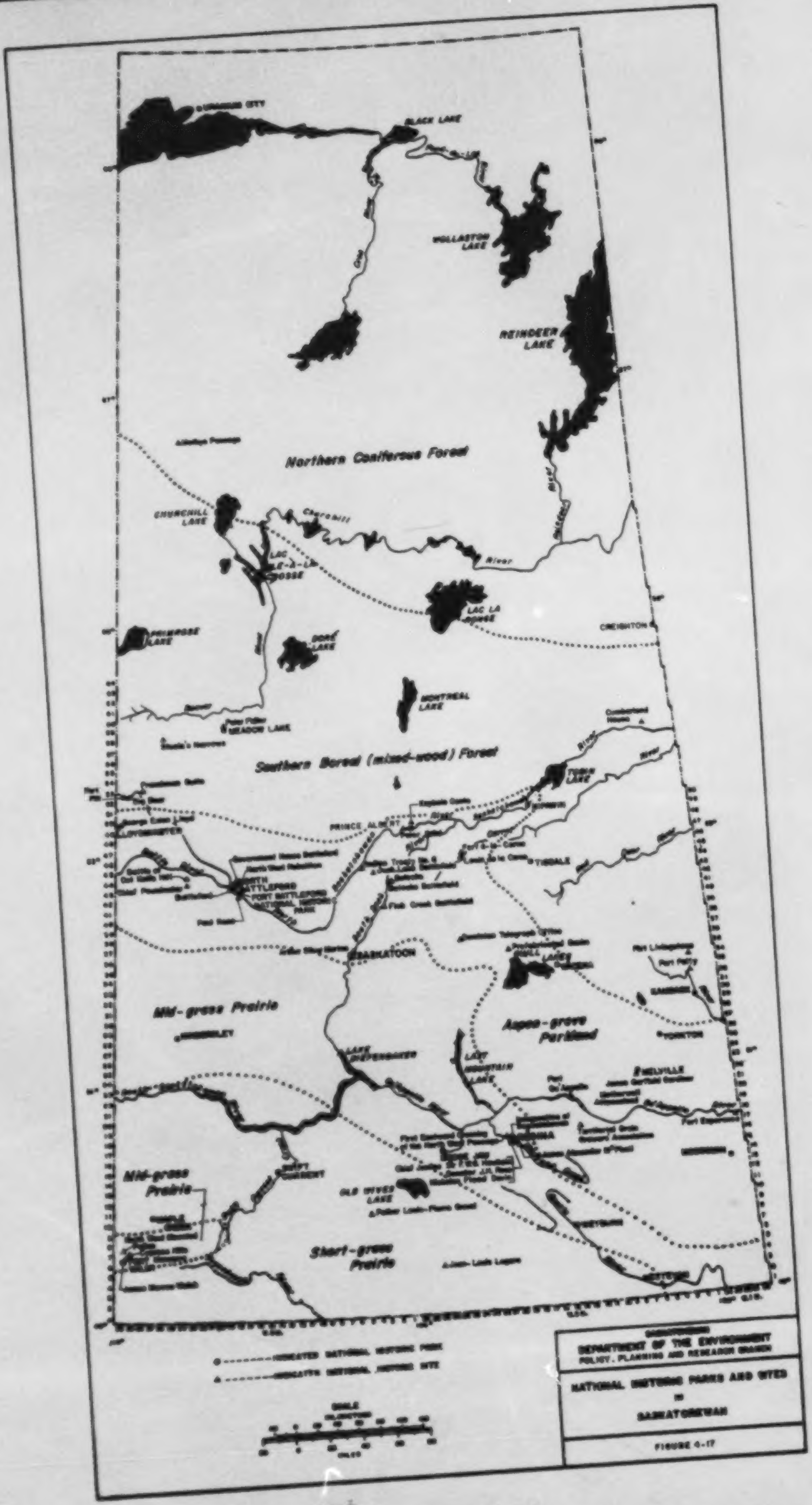
URANIUM CITY
BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill River
LAC ÎLE-À-LA CROSSE
LAC LA RONGE
CREIGHTON
PRIMROSE LAKE
DORÉ LAKE
MONTREAL LAKE
MEADOW LAKE
Cumberland House
Southern Boreal (mixed-wood) Forest
TOBIN LAKE
PRINCE ALBERT
LLOYDMINSTER
NORTH BATTLEFORD
FORT BATTLEFORD NATIONAL HISTORIC PARK
TISDALE
Fish Creek Battlefield
SASKATOON
Mid-grass Prairie
KINDERSLEY
Aspen-grass Parkland
YORKTON
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
MELVILLE
REGINA
SWIFT CURRENT
OLD WIVES LAKE
Mid-grass Prairie
Short-grass Prairie
ESTEVAN
DESIGNATED NATIONAL HISTORIC PARK
DESIGNATED NATIONAL HISTORIC SITE
SCALE
KILOMETRES
MILES

DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

NATIONAL HISTORIC PARKS AND SITES
IN
SASKATCHEWAN

FIGURE 4-17

Two national historic parks, Fort Walsh and Fort Battleford, have been designated in Saskatchewan. An historic marker was first erected at Fort Walsh in the Cypress Hills in 1926 to commemorate one of the oldest North West Mounted Police posts in Canada. The National Historic Sites Service acquired over 3,800 acres of land around Fort Walsh from the Royal Canadian Mounted Police in the late 1960's. In 1972, 1,600 acres of this land was designated as a national historic park, which is still under development. The land controlled by the National Historic Sites Service but not included in the park is leased to area ranchers for grazing purposes.

Fort Battleford was established as a national historic park in 1951, also to commemorate a North West Mounted Police post. The park contains two national historic sites. Additional information about the two national historic parks is given in Table 4-56 and their locations are shown in Figure 4-17.

(b) **National historic sites**

Forty-five national historic sites have been established in Saskatchewan since 1924. Information on these sites is presented in Table 4-66, and their locations are shown in Figure 4-17. Thirty sites consist only of a monument and/or plaque. The other 15 sites include property ranging in area from under one acre (five sites) to 500 acres.

In Saskatchewan, the Batoche National Historic Site is the only one being considered for future designation as a national historic park. The federal government owns 2,000 acres at Batoche, but only 500 acres have been officially designated for historic preservation purposes. The Batoche National Historic Site contains two plaques as well as Batoche Battlefield and Batoche River Crossing, which are designated as a national historic site and a provincial historic site respectively.

National historic sites have been designated on land owned in various ways, including federal and provincial Crown land, urban and municipal lands, private land and Indian reserves. Land tenure is shown in Table 4-66.

(iii) Provincial historic parks

The purpose of a provincial historic park is to preserve and display an area of historic interest. It is more than just a simple monument commemorating a past event. Nine provincial historic parks, occupying 641 acres, have been established since 1957. Information about these parks is given in Table 4-67, and their locations are shown on Figure 4-18.

Five provincial historic parks, Cannington Manor, Fort Pitt, Steele's Narrows, Touchwood Hills and Wood Mountain are designated as protected areas under *The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act*. Part of Fort Carlton and Last Mountain House Provincial Historic Parks are designated as protected areas. Protected area status has been given to these sites to prevent unauthorized removal of artifacts from the actual site of the settlements. One park, Touchwood Hills, is designated as a recreation site, and the part of Fort Carlton which is not a protected area is also a recreation site. This designation, also under *The Parks Act*, is to allow the sites to be developed for limited recreational purposes such as picnic facilities.

Steele's Narrows Provincial Historic Park contains a national historic site, and Cumberland House is within a provincial forest. Saint Victor Petroglyphys has no other designations or protective status. All provincial historic parks are located on provincial Crown land.

(iv) Provincial historic markers

The Department of Culture and Youth, Historic Resources Branch, has established 172 provincial historic markers. The purpose of these markers is to describe events which occurred at or near them. Most of the markers are situated at roadsides, but in a few cases plaques have been mounted on sides of buildings.

A number of provincial historic markers are located in areas designated primarily for other purposes. Additional information about the markers is given in Table 4-68, and their locations are shown in Figure 4-19.

The Crown does not hold title to the land on which the majority of provincial historic markers are located. In many cases, there is only a verbal agreement with the landowner allowing placement of a plaque and monument. This has presented some problems when land ownership changes.

For historic markers of local interest only, the Historic Resources Branch supplies only the commemorative plaque. As the location of the monument and its construction are left to citizens requesting the historic site designation, exact locations of several sites are unknown.

3. Visitations to historic, cultural and heritage lands

Because of the nature of historic, cultural and heritage lands and problems encountered with counting procedures, visitation records are not available for these areas. Some visitation records are available for provincial and federal historic parks, however.

(i) Provincial historic parks

Visitation reports from three historic parks showed 30,280 visitors in 1978. This was a decrease of four per cent from 1977. Fort Carlton received the most use with 14,926 visitors. Table 4-69 presents additional information on visitations to provincial historic parks.

(ii) National historic parks

There are two national historic parks in Saskatchewan; Fort Walsh and Fort Battleford. As shown in Table 4-70, there were 35,675 visitations to Fort Walsh and 29,607 visitations to Fort Battleford in 1978. Table 4-70 also presents visitation figures for Batoche National Historic Site.

Table 4-67

Provincial historic parks

Name	Order-in-council number	Date est.	General location (Sec-Twp-Rge-Mer)	Area (acres)	Land ownership	Habitat type[1]	Purpose of designation	Other designations
Cannington Manor	908/68	1965	W14-9-1-W2	25	Crown	3	site of 19th century settlement	protected area
Cumberland House		N/A	29-57-2-W2	25	Crown	4	interpretive display of remains of a steamship used during 1885 North West Rebellion	within a provincial forest
Fort Carlton	1257/57	1957	9-45-4-W3	340	Crown	3	Hudson's Bay Company post	contains a protected area
Fort Pitt		1973	8-53-26-W2	25.4	Crown	4	Hudson's Bay Company post	protected area
Last Mountain House	769/64	1964	NE 8-21-21-W2	145	Crown	2	former trading post	protected area
Saint Victor Petroglyphs		1968	SE 29-4-29-W2	10.4	Crown	1	aboriginal petroglyph site	
Steele's Narrows	1070/57	1957	E 26-58-23-W3	40	Crown	4	site of last military engagement on Canadian soil	protected area and contains a national historic site
Touchwood Hills	507/64	1964	29-27-15-W2	16.7	Crown	3	Hudson's Bay Company post	protected area and recreation site
Wood Mountain	1257/57 1523/66	1957	NW 20-4-3-W3	13.6	Crown	1	North West Mounted Police post	contains a protected area

[1] Key to major habitat types —

1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January, 1976, p. 54.

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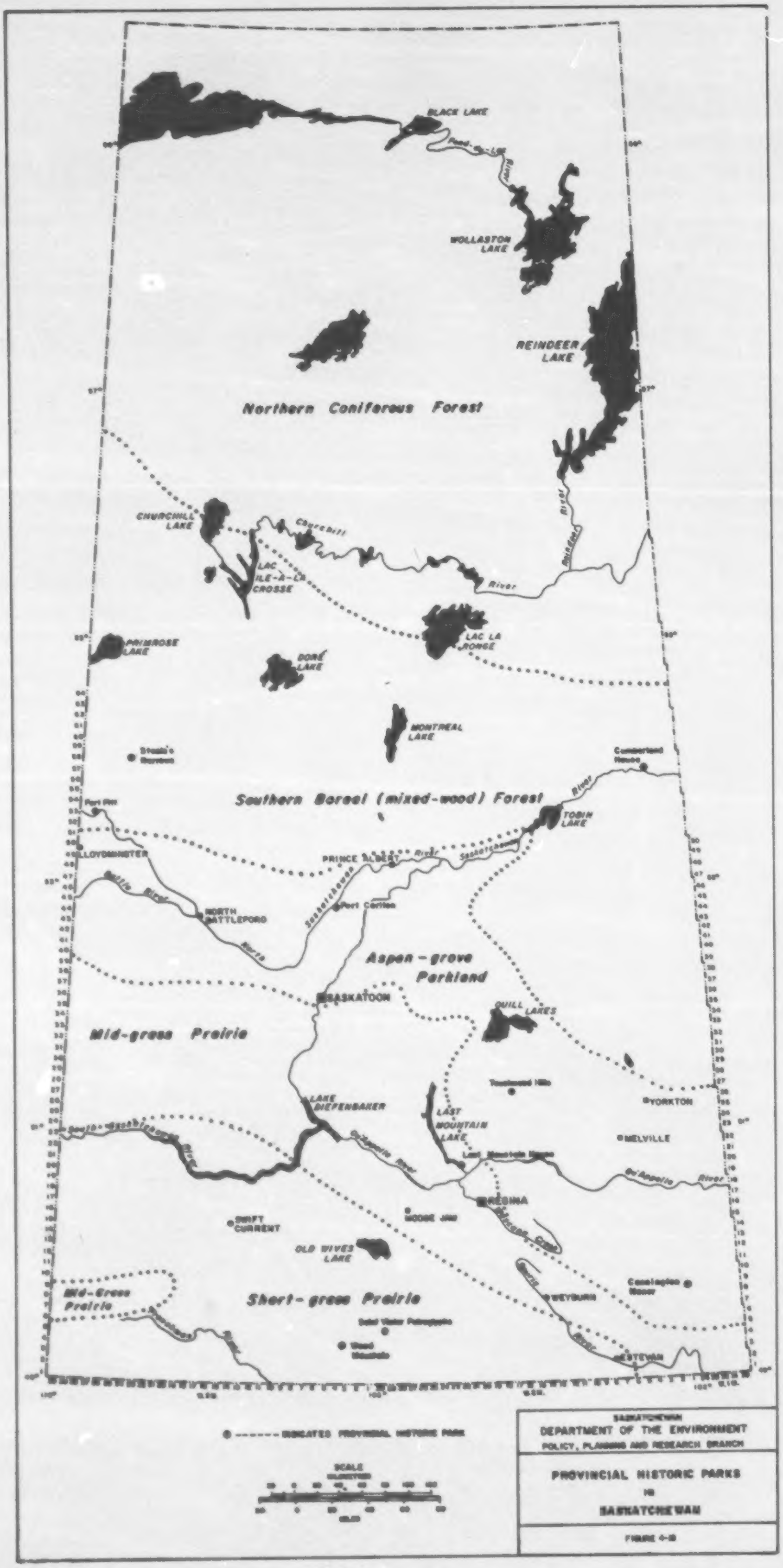
BLACK LAKE
Fond-du-Lac River
WOLLASTON LAKE
REINDEER LAKE
Reindeer River
Northern Coniferous Forest
CHURCHILL LAKE
Churchill River
LAC ILE-A-LA CROSSE
PRIMROSE LAKE
DORÉ LAKE
LAC LA RONGE
MONTREAL LAKE
Steele's Narrows
Cumberland House
Southern Boreal (mixed-wood) Forest
Fort Pitt
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
Saskatchewan River
Battle River
NORTH BATTLEFORD
North Saskatchewan
Fort Carlton
Aspen-grove Parkland
SASKATOON
QUILL LAKES
Mid-grass Prairie
Touchwood Hills
YORKTON
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
MELVILLE
South Saskatchewan River
Qu'Appelle River
Last Mountain House
REGINA
MOOSE JAW
SWIFT CURRENT
OLD WIVES LAKE
Cannington Manor
Mid-Grass Prairie
Short-grass Prairie
WEYBURN
Souris River
Saint Victor Petroglyphs
Wood Mountain
ESTEVAN
INDICATES PROVINCIAL HISTORIC PARK
SCALE
KILOMETRES
MILES

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PROVINCIAL HISTORIC PARKS
IN
SASKATCHEWAN

FIGURE 4-10

Table 4-68

Provincial historic markers

Name	Order-In-Council Number	Date established	Location (Sec-Twp-Rge-Mer)	Habitat type¹	Other designations
1. Acoose		1968	5-19-5-W2	3	Provincial Recreation Area
2. Ahtahkakoup		1966	10-49-3-W3	4	
3. All Saint's Church		N/A	14-9-1-W2	3	Provincial Historic Park
4. Almighty Voice		1966	3-44-2-W3	3	
5. Almighty Voice		1969	21-44-20-W2	3	
6. Amisk Lake Canoe Marker		1972	54°23'N 102°05'W	4	Within a Provincial Forest
7. Assiniboine Elbow		1954	17-32-33-W1	4	Protected property
8. Assiniboine River Canoe Marker		1972	Kamsack #8 hwy.	4	
9. Barr Colony Campsite		1973	19-36-5-W3	3	
10. Batoche River Crossing		1964	17-43-1-W3	3	Within a National Historic Site
11. Battleford-Red Deer Forks Trail	1257/57	1956	SW 32-26-27-W3	2	Protected property
12. Battleford-Swift Current Trail		Before 1954	25-15-14-W3	1	
13. Battle River Forts		1954	16-43-16-W3	3	
14. Beaver City		1971	54°27'N 102°14'W	4	Within a Provinical Forest
15. Beaver River Canoe Maker		1972	54°49'N 107°05'W	4	Within a Provincial Forest
16. Bell Farm		1964	13-18-13-W2	3	
17. Big Bear		1968	31-45-21-W3	3	
18. Bone Trail		N/A	SE 29-34-8-W3	2	
19. Boundary Commission Trail	1257/57	1955	NW 20-1-6-W2	1	Protected property
20. Buffalo Rubbing Stone		1966	9-29-26-W3	2	
21. Buffalo Rubbing Stone		1974	NE 26-22-27-W2	2	
22. Cannington Manor		N/A	14-9-1-W2	3	Provincial Historic Park
23. Carlton Trail		1957	NE 28-43-2-W3	3	
24. Chesterfield House		1968	6-23-28-W3	1	
25. Chimney Coulee		1969	26-7-21-W3	2	
26. Churchill River Canoe Marker		1972	55°37'N 104°41'W	5	Within a Provincial Forest
27. Clark's Crossing	1257/57	Before 1960	SE 33-38-3-W3	3	Protected property
28. Coal Industry	1257/57	1955	NW 7-2-6-W2	1	Protected property
29. Cochin-Green Lake Trail		N/A	36-46-17-W3	3	
172. C.P.R Railroad Grade		N/A	NW 14-9-1-W2	3	Provincial Campground
30. Crater Lake		1974	SE 2-23-4-W2	3	
31. Cree-Blackfoot Massacre		1967	4-25-5-W3	2	Regional Park
32. Cripple Camp, NWMP		Before 1960	1-11-5-W3	1	
33. Cumberland House		N/A	53°58'N 102°06'W	4	Provincial Historic Park and a Provincial Forest
34. Cumberland House Canoe Marker		1972	53°56'N 102°17'W	4	Within a Provincial Forest
35. Cypress Hills Geology		1965	8-12-26-W3	1	Within a Provincial Campground
36. Diefenbaker Homestead		1967	SW 18-17-19-W2	2	
37. Dirty Thirties		1978	Ponteix	1	Within a Regional Park
38. Donald Gunn		N/A	Good Spirit Provincial Park	4	Within a Provincial Park
39. Eagle Hills Post		1968	6-41-12-W3	3	Within a Regional Park
40. Eastend NWMP Post		1967	29-6-21-W3	1	
41. Eact European Migration		1977	Yorkton	4	
42. Elbow-Fort a la Corne Trail		N/A	18-45-26-W2	3	
43. Elbow-Prince Albert Trail		1967	27-34-6-W3	2	
44. Emmanuel College		1954	5-48-26-W2	3	
45. Fort Alexandria		1968	SE 6-33-3-W2	4	
46. Fort a la Corne		1969	24-49-22-W2	3	Within a Provincial Forest and a Wildlife Management Unit
47. Fort a la Corne-Cumberland House		1973	SW 21-45-21-W2	3	
48. Fort Carlton-Fort a la Corne Trail		Before 1960	4-48-26-W2	3	
49. Fort Carlton-Green Lake Trail		Before 1960	SW 18-47-5-W3	3	
50. Fort Carlton-Green Lake Trail		1967	SE 15-53-11-W3	4	
51. Fort Carlton-Touchwood Trail		1973	SW 20-33-21-W2	2	
52. Fort Ellice-Elbow Trail	1523/66	Before 1960	SE 33-20-24-W2	1	Within a Recreation Site
53. Fort Ellice-Fort Carlton Trail	1257/57	1957	NE 28-42-2-W3	3	Protected property
54. Fort Ellice-Fort Qu'Appelle Trail		1967	9-17-10-W2	3	
55. Fort Ellice-Wood Mountain Trail		1954	4-14-30-W1	3	
56. Fort John		N/A	9-18-31-W1	3	
57. Fort Pelly	1257/57	1967	SE 25-32-33-W1	4	
58. Fort Pelly Trail		1966	NW 28-30-30-W1	4	Within a Provincial Park and a Provincial Forest
59. Fort Pitt		1968	8-53-26-W3	4	Within a Provincial Historic Park
60. Fort Pitt-Fort Carlton Trail		1967	NW 9-49-19-W3	3	
61. Fort Qu'Appelle NWMP Post		1954	19-21-13-W2	3	
62. Francois-Finlay Forts		1967	SE 13-50-15-W2	3	
63. Fort Qu'Appelle-Touchwood Hills Trail		N/A	NE 2-22-14-W2	3	
64. Fort Qu'Appelle-Fort Pelly Trail		N/A	NW 9-25-6-W2	3	Protected property
65. Fort Riviere a la Biche		N/A	28-44-3-W2	4	
66. Fort Walsh-Fort Qu'Appelle Trail		1954	20-16-26-W2	2	Regional Park
67. Fort Walsh-Fort Qu'Appelle Trail		1967	29-9-13-W3	1	
68. Fort Walsh-Fort Qu'Appelle Trail		1962	28-10-26-W3	2	Within a Game Preserve
69. Fort Walsh-Moose Jaw Trail		1967	12-12-15-W3	1	Within a Regional Park
70. Fort Walsh-Wood Mountain Trail	1257/57	Before 1960	NW 25-5-19-W3	1	
71. French Settlement		1967	31-14-2-W2	3	
72. Gabriel Cote		1966	SW 34-30-32-W1	4	
73. Gabriel Dumont		1961	8-43A-1-W3	3	National Historic Site
74. Gabriel's Crossing		N/A	5-43A-1-W3	3	
75. Gas and Oil Discoveries		1954	NW 35-49-27-W3	3	
76. Gold Dredging on the North Saskatchewan		1966	9-49-27-W2	3	Within a Provincial Forest
77. Goodwin House		1968	SW 34-19-15-W3	1	Within a Provincial Park
78. Green Lake Fur Trade		1966	30-61-12-W3	4	
79. Hamona Industrial Association	1523/66	1954	NE 10-18-31-W1	3	Protected property and within a Recreation Site
80. Hanson Lake Road		1978	1-64-11-W2		Within a Provincial Forest
81. Henry-Frobisher Post		N/A	54°31' N 102°25'W	4	Within a Provincial Forest
82. Home Makers Club		1976	Univ. of Sask.	3	
83. Hon. W. J. Paterson		1978	Grenfell	3	
84. Hudson's Bay Wintering Post		1966	23-10-3-W2	3	Within a Provincial Park and a Provincial Forest
85. Indian Head Experimental Station		N/A	24-18-14-W2	3	
86. Isaac's House		1969	NW 20-49-17-W2	3	
87. John Macoun		N/A	22-8-20-W3	2	
88. Joseph Burr Tyrrell		1968	12-68-2-W2	4	Within a Provincial Forest
89. Kelsey's Campsite		1967	NW 16-45-21-W2	3	
90. Kelsey Trail		1966	3-41-11-W2	4	Within a Provincial Park and a Provincial Forest

Table 4-68 (continued)

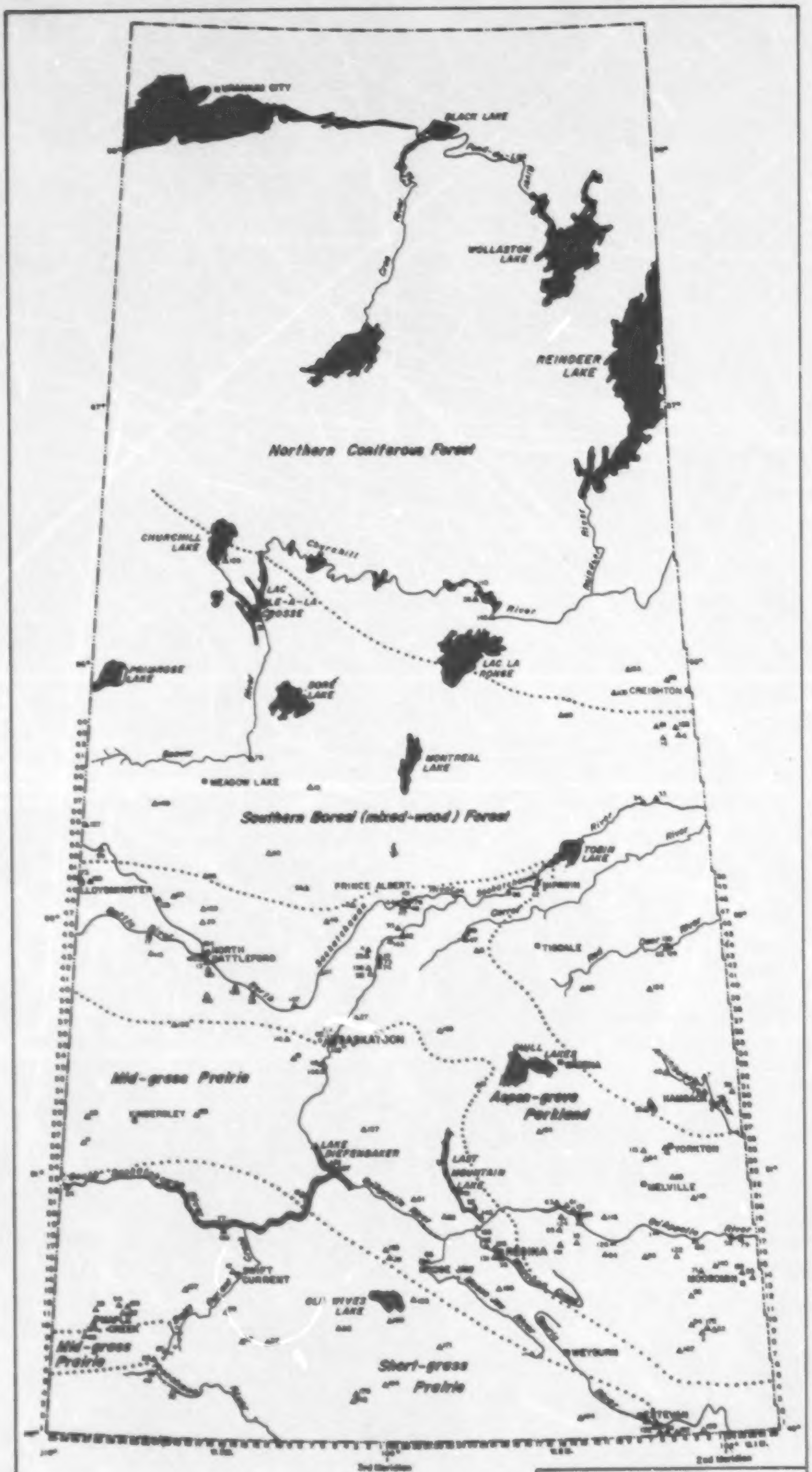
Provincial historic markers

Name	Order-In-Council Number	Date established	Location (Sec-Twp-Rge-Mer)	Habitat type'	Other designations
91 Last Mountain Bird Sanctuary		N/A	28-23-23-W2	2	Within a Provincial Park
92 Last Mountain House Historic Park		N/A	NE 8-21-21-W2	2	Within a Provincial Historic Park
93 Lindsay Church		N/A	SW 4-47-27-W2	3	
94 Lister Kaye Enterprises		1964	NW 22-12-23-W3	1	Within a Recreation Site and an Association Community Pasture
95 Meadow Lake-Battleford Trail		1967	6-51-16-W3	4	
96 Mistawasis		1966	11-50-8-W3	4	Within a Regional Park
97 Mistusine		1967	3-25-5-W3	2	
98 Moose Jaw-Red Deer Forks Trail		N/A	20-17-29-W2	2	
99 Moose Mountain-Fort Ellice Trail		1969	NE 2-13-3-W2	3	
100 Northgate Junior Red Cross Society		1966	6-1-2-W2	2	
101 North Saskatchewan River Canoe Marker		1972	4-48-26-W2	3	
102 Nut Lake-Pewei Trail		1967	NW 22-40-5-W2	4	Within a Wildlife Management Unit and a Provincial Forest
103 NWMP Cemetery		1954	9-11-26-W3	1	Within a Provincial Forest
104 NWMP Trek West		1973	NW 34-2-14-W2	1	
105 Olaf Hanson		1968	16-67-6-W2	4	Within a Provincial Forest
106 Old Wives Massacre		N/A	19-13-27-W2	2	
107 Onion Lake Settlement		1966	5-55-27-W3	4	Within a Regional Park
108 Palliser's Campsite and McMurray's Post		1966	2-48-17-W3	3	Within a Provincial Park
109 Peter Pond-Churchill Canoe Marker		1972	55°51'N 108°29'W	4	Within a Provincial Forest
110 Peter Pond's Post		N/A	55°38'N 104°44'W	5	Within a Provincial Forest
111 Petrofka Ferry	1523/68	1959	SW 31-42-6-W3	3	Within a Recreation Site
112 Pile of Bones		1967	SW 11-18-21-W2	2	
113 Poundmaker		1966	32-43-21-W3	3	
114 Premier Anderson		1966	34-36-5-W3	3	
115 Premier Dunning		1967	NW 32-25-6-W2	3	
116 Premier Gardiner	908/68	1967	NE 13-20-10-W2	3	Within a Recreation Site
117 Prince Albert NWMP Post		N/A	4-48-26-W2	3	
118 Prince Albert-Red Deer Forks Trail		1967	NE 28-36-9-W3	2	
119 Primitive Methodist Colony		N/A	3-22-2-W2	3	
120 Qu'Appelle River Canoe Marker		1972	Round Lake	3	
121 Qu'Appelle River Crossing		1954	16-21-13-W2	3	
122 Qu'Appelle Trail		1954	27-16-4-W2	3	
123 Qu'Appelle Valley Geology		N/A	32-19-21-W2	2	
124 Qu'Appelle Valley Legend #1		N/A	SW 36-20-14-W2	3	
125 Qu'Appelle Valley Legend #2		N/A	30-20-12-W2	3	
126 Racette's Crossing		N/A	17-18-9-W2	3	
127 Ranching Industry		1964	NW 22-12-23-W3	1	Within a Recreation Site and an Association Community Pasture
128 Red River Cart		N/A	9-14-31-W1	3	Within a Recreation Site
129 Red River Lake Trail		1967	22-44-3-W2	4	
130 Red River Canoe Marker		1972	28-44-3-W2	4	Within a Regional Park
131 Regina Air Terminal		1965	22-17-20-W2	2	
132 Rock Outcrop		N/A	NE 30-1-6-W2	1	
133 Royal Canadian Mounted Police 1873-1973		1973	NW 25-17-20-W2	2	
134 Saskatchewan Herald		1959	SW 20-43-16-W3	3	
135 Saskatchewan Landing		1954	35-19-15-W3	1	Within a Provincial Park
136 Saskatchewan River Forks		1967	24-49-22-W3	3	
137 Saskatchewan Valley Land Colony		N/A	9-29-2-W3	2	Provincial Picnic Ground
138 Saskatoon-Battleford Trail		1968	15-41-14-W3	3	Protected Property
139 Seager Wheeler	1257/57	N/A	SW 3-43A-2-W3	3	Protected Property
140 Second Meridian		N/A	25-15-1-W2	3	
141 Short Creek Camp NWMP		1954	29-1-6-W2	1	
142 Sitting Bull		1968	20-4-3-W3	1	Within a Regional Park
143 South Branch House		1963	2-45-1-W3	3	
144 South Saskatchewan River Canoe Marker		1972	10-34-6-W3	2	Within a Provincial Park
145 Stanley Mission		1960	55°25'N 104°33'W	5	Within a Provincial Forest
146 Steamshipping on Last Mountain Lake		N/A	33-20-21-W2	2	
147 Steamshipping on the North Saskatchewan		N/A	30-39-8-W3	3	
148 Steamshipping on the South Saskatchewan		N/A	SW 28-36-5-W3	3	
149 Steele's Narrows Historic Park		1968	14-58-22-W3	4	Within a Provincial Historic Park
150 St. John's Minster		N/A	NW 35-49-27-W3	3	
151 St. John the Baptist Mission		N/A	26-74-13-W3	4	Within a Provincial Forest
152 St. Joseph's Colony		N/A	NW 32-37-19-W3	2	
153 Sturgeon Weir River Canoe Marker		1972	54°58'N 102°40'W	4	Within a Provincial Forest
154 St. Victor's Petroglyphs		1968	SE 29-5-29-W2	1	Within a Provincial Historic Park
155 Swift Current-Battleford Trail		N/A	19-29-17-W3	2	
156 Swift Current-Battleford Trail		N/A	20-40-16-W3	3	
157 Swift Current-Maple Creek Trail		1967	4-14-18-W3	1	
158 76 Ranch		1964	NW 22-12-23-W3	1	Within a Recreation Site and an Association Community Pasture
159 Telegraphs Flats		1954	SW 20-43-16-W3	3	
160 Territorial Council Buildings		N/A	24-43-17-W3	3	
161 Territorial Grain Growers' Association		N/A	13-18-14-W2	2	
162 The Last Best West		1977	North Portal tourist center reception	2	
163 Third Meridian		1964	30-17-29-W2	2	
164 Touchwood Hills Post		1962	29-27-15-W2	3	Within a Historic Park
165 Troy-Prince Albert Trail	1257/57	N/A	NW 19-37-23-W2	3	
166 Waterhen River Canoe Marker		1972	54°28'N 102°05'W	4	Within a Provincial Forest
167 Wood Mountain-Fort Ellice Trail		N/A	NE 16-8-4-W2	3	
168 Wood Mountain-Fort Qu'Appelle Trail	1257/57	N/A	SE 2-14-20-W2	2	
169 Wood Mountain-Fort Qu'Appelle Trail		N/A	30-11-29-W2	1	
170 Wood Mountain NWMP Post		N/A	NW 20-4-3-W3	1	
171 Wood Mountain Trail		N/A	17-9-25-W2	1	Within a Regional Park

'Key to Major Habitat Types —
1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest
5. Northern Coniferous Forest

Source Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, pp. 58-59

Personal Communication


URANIUM CITY
BLACK LAKE
WOLLASTON LAKE
REINDEER LAKE
Northern Coniferous Forest
CHURCHILL LAKE
Churchill River
LAC ÎLE-À-LA-CROSSE
PRIMROSE LAKE
DORÉ LAKE
LAC LA RONGE
CREIGHTON
MONTREAL LAKE
MEADOW LAKE
Southern Boreal (mixed-wood) Forest
TOBIN LAKE
LLOYDMINSTER
PRINCE ALBERT
NIPAWIN
NORTH BATTLEFORD
TISDALE
SASKATOON
QUILL LAKES
Mid-grass Prairie
KINDERSLEY
Aspen-grove Parkland
KAMSACK
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
YORKTON
MELVILLE
REGINA
MOOSE JAW
SWIFT CURRENT
OLD WIVES LAKE
MOOSOMIN
WEYBURN
ESTEVAN
Mid-grass Prairie
Short-grass Prairie
2nd Meridian
2nd Meridian
▲ ------------ INDICATES PROVINCIAL HISTORIC SITE
SCALE
KILOMETRES
MILES

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

PROVINCIAL HISTORIC SITES
IN
SASKATCHEWAN

FIGURE 4-10

Table 4-69
Visitations to Saskatchewan provincial historic parks 1977-1978

Site	1977 persons entering	1978 persons entering
Cannington Manor	13,662	13,933
Fort Carlton	16,169	14,926
Last Mountain House	N/A	N/A
Wood Mountain	1,615	1,421
Total	31,446	30,280

Table 4-70
Visitations to national historic parks in Saskatchewan, and Batoche national historic site

Year Year	Fort Walsh	Fort Battleford	Batoche
1973	36,283	40,711	32,993
1974	34,400	40,948	21,637
1975*	23,520	47,825	23,000
1976	29,930	N/A	19,188
1977	29,325	37,261	20,203
1978	35,675	29,607	24,046

* April 1 to December 31 estimate.

G. Lands for research and teaching[7]

Various lands have been set aside in Saskatchewan for research and teaching purposes. In general the subjects researched and taught are natural resources and the environment. For the purpose of this report, such lands have been classified as follows: university biological research and teaching areas, agricultural research stations, forestry research areas, wildlife research areas, and school outdoor education centres. Areas discussed in this section are listed in Tables 4-71 and 4-72 and shown on Figure 4-20.

It should be noted that this section does not represent a complete inventory of research and teaching areas in Saskatchewan. It does try to provide an inventory of areas formally established or designated for such purposes, but there are other research and teaching sites which are used informally and on a temporary basis which are not included in this section. Examples of such areas include: (a) private farm land and public recreation areas used for outdoor education by the Regina Board of Education; (b) provincial Crown land at Candle Lake used for natural resource teaching purposes by the Kelsey Institute; and (c) various institutional camps used for teaching purposes.

1. University biological research and teaching areas

Four university research and teaching areas can be included in this section: Cypress Hills, Strawberry Lakes, Matador and Fairy Island. All of these areas are located on provincial Crown land and have been established under long-term lease agreements with the provincial government.

The Cypress Hills research and teaching area was established in 1971 by the Department of Biology, University of Regina. The field station, which is located in the West Block of Cypress Hills Provincial Forest, was leased for 21 years (special lease number S-92) from the Department of Tourism and Renewable Resources.

Primary use of the site is teaching of undergraduate biology classes and ecological research. Classes in animal behavior and plant classification have been taught at the site. A condition of the lease states that use of the area will be conducted in a manner that will minimize disturbance and destruction of the environment. The only other use permitted in the area is controlled grazing, which is allowed in order to remove excess vegetation to reduce the fire hazard.

The Strawberry Lakes research area is leased by the Department of Biology, University of Regina, from the Saskatchewan Department of Agriculture. The lease was granted in 1968 for a period of 21 years and states that the area is to be used for research purposes only. The area lies within the Strawberry Lakes Provincial Community Pasture and has been fenced and posted to control access to the area.

Research in the area has been primarily observational, although one species of plant, a butterwort, is collected for research purposes. Three major research projects have been undertaken in the area; a vegetation list and map, a plant succession study in relation to the receding lake, and a small mammal study.

The Matador research area is leased by the Department of Plant Ecology, University of Saskatchewan, from the Department of Tourism and Renewable Resources (two sections, lease number S-46) and from the Department of Agriculture (one section, special lease number 37). Both leases are for 21 years and took effect in 1967. The area has been reserved from mineral exploration since October of 1972 under Section 16 of *The Mineral Resources Act* because the Texaco Oil Company had oil exploration rights and it was felt that such exploration would adversely affect research in the area.

The lessee manages the area exclusively for research into productivity of a natural grassland area. Research projects have included studies of primary (floral) and secondary (faunal) production, feeding ecology of grasshoppers, soil bacteria, and nitrogen fixation in grassland soils. Research to date has been carried out under the auspices of the Canadian Committee of the International Biological Programme.

The Fairy Island research and teaching area is located within the Northern Provincial Forest. The island is leased by the Biology Department, University of Saskatchewan, from the Department of Tourism and Renewable Resources under lease number P-26 for 21 years (1968 to 1989). The area was leased to the Biology Department for an undetermined period of time prior to 1968. An unspecified amount and type of research has been carried out in the area, although there has been an extensive classification of the island's flora. The island was designed as a wildlife refuge in 1970.

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[7] The material for this section was derived primarily from: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January, 1976, pp. 62-67.

Table 4-71

Non-agricultural research and teaching areas

Name	Date est.	Location	Area (acres)	Administrating agency	Land ownership	Controlled by	Habitat type[1]	Purpose	Other designations
Cypress Hills	1971	E 20-7-29-W3 E 17-7-29-W3	642	University Regina	Provincial Crown	Lease	2	University teaching and research	
Strawberry Lakes	1968	LSD's 4, 5 & 12 in 22 SE 21-16-13-W2	160	University of Regina	Provincial Crown	Lease	3	University research	Within a provincial community pasture
Matador	1967	10, 15, 16-20-13-W3	1,922	University of Saskatchewan	Provincial Crown	Lease	1	University research	Protected area
Fairy Island	1968	S 32-53-27-W2	118	University of Saskatchewan	Provincial Crown	Lease	4	University research	Wildlife refuge and within a provincial forest
St. Denis	1968	E 29, 28-37-1-W3	960	Canadian Wildlife Service	Federal Crown	Title	3	Wildlife research	
Candle Lake Field Station	1954	13-55-23-W2	Approx. 20	Canadian Forestry Service	Provincial Crown	Lease	4	Forestry research	Within a provincial forest
Saskarie	1972	W 8-9-3-W2 NW 5-9-3-W2 SW 27-9-5-W2	640	Prairie Lore and Living Society	Prairie Lore & Living Society Members	Title	3	Outdoor education for Grades 5-12	
Camp Cactus	1973	W 17-29-14-W3	5	Swift Current Public School Board	Provincial Crown	Lease	1	Outdoor education for high school students	
The Turn	1974	Moose Jaw	Approx. 15	Moose Jaw Environmental Study Committee	City of Moose Jaw	Informal Agreement	2	Outdoor education for all school grades	

[1] Key to Major Habitat Types —
1. Short-grass Prairie
2. Mid-grass Prairie
3. Aspen-grove Parkland
4. Southern Boreal (mixedwood) Forest

Source: Saskatchewan Department of the Environment, *Designated Land Areas in Saskatchewan*, Policy, Planning and Research Branch, January 1976, p. 63.

Table 4-72

Agriculture Canada research stations

	Area (acres)	General location	Purpose
Regina	886	4-17-19-W2 E½ 32-16-19-W2	Weed control and increasing new seed stock.
Melfort	915	30-44-18-W2 S½ 29-44-18-W2	Beef cattle and forage production.
Swift Current	2280	29-15-13-W3 S½ 32-15-13-W3 S½, NW¼ 28-15-13-W3 SW¼ 21-15-13-W3 16-15-13-W3	Cereal crop breeding, machine design and instrumentation. Forage crop breeding. Soil studies (fertilizers, hydrology).
Indian Head	1210	19-18-12-W2 30-18-12-W2 N½ 18-18-12-W2	Crop research on cereal, forage, speciality crops. Seed increase. Field husbandry (weeds).
Saskatoon at Saskatoon	260	SW¼ 34-36-5-W3 NE¼ 1-37-5-W3 12-37-5-W3 N½ of SW¼ 1-37-5-W3	Crop research, breeding cereal crops, forage crops, research on weed control. Insect control.
Saskatoon at Scott	834	NE¼ 17-39-30-W3 S½ 17-39-20-W3 S¼ 20-39-20-W3 W½ 19-39-20-W3	Same as above

2. Agricultural research stations

Responsibility for agricultural research rests with the federal government. In Saskatchewan, Agriculture Canada maintains five research stations at Regina, Melfort, Swift Current, Indian Head and Saskatoon. The Saskatoon station also uses some land at Scott for agricultural research purposes. Total acreage of land devoted to agricultural research as federal research stations is 6,441 acres. This land is held by Agriculture Canada as federal Crown land. Additional information on the research stations is shown in Table 4-72.

3. Foretry research areas

Forestry research is under the jurisdiction of the federal government. The primary federal forestry research centre for the prairie region is in Edmonton; however, a small forestry field research station is located on provincial Crown land at Candle Lake. This station was established in 1954, when a 33-year lease was obtained from the Department of Tourism and Renewable Resources. The site is approximately 20 acres in area.

4. Wildlife research areas

One federal wildlife research area exists in Saskatchewan. The St. Denis research area occupies 960 acres and is managed by the St. Denis Program and Policy Committee of the Canadian Wildlife Service, Saskatoon. The area was established in 1958 for use as a wetland habitat research area. Research projects include surveys of soil, ground water, topography, land use, vegetation and waterfowl use. It is expected that future research will involve the manipulation of the wetland habitat.

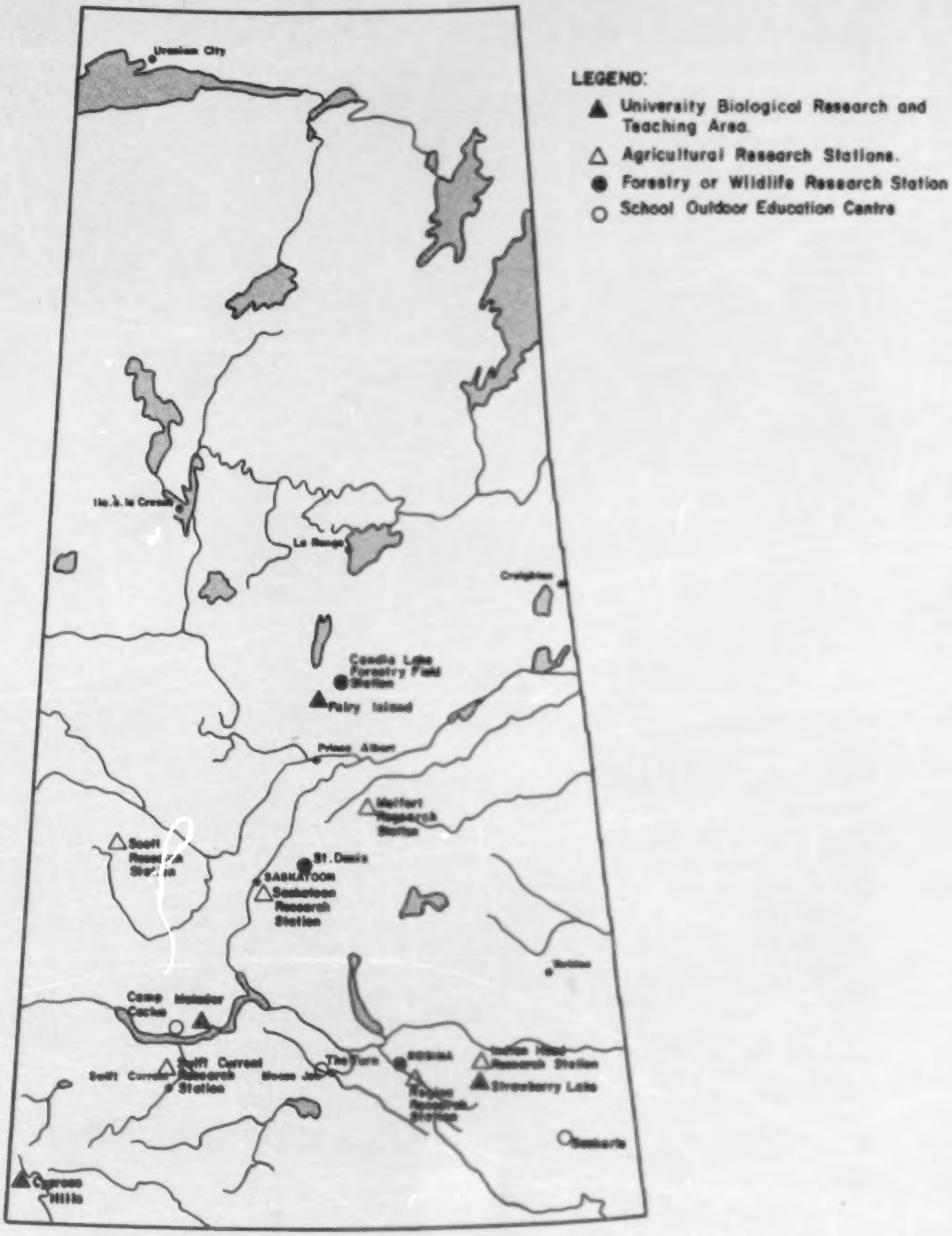
5. School outdoor education centres

A number of schools and school boards have recently incorporated outdoor education into their curricula. This section examines two areas which have been set aside for the purpose of school outdoor education.

The Prairie Lore and Living Society was incorporated as a society in 1972 with the primary objective of establishing a year-round outdoor education facility for Saskatchewan school students. Subsequently, "Saskarie" was established on 640 acres of land adjacent to Moose Mountain Provincial Park. The facility, still under development, provides opportunities for Grades 5 to 12 students to develop a greater awareness and understanding of the prairie physical and cultural environment.

In 1973 the Swift Current School Board began using a site near Saskatchewan Landing on Lake Diefenbaker for some of its outdoor education classes. In January, 1974, a ten-year lease for the use of five acres of land under the administration of the Department of Tourism and Renewable Resources was signed. The site is called "Camp Cactus", and its objectives are similar to those of Saskarie. It provides a field facility for outdoor education programs centred around the biological and earth sciences, map reading and orienteering, social studies, art, and language arts. The site is still undergoing development, but it already accommodates students in winter and summer.

A third example of outdoor education centers is "The Turn", which is an area of municipal-owned land near Moose Jaw. It was initiated as a pilot project of the Moose Jaw Environmental Study Committee in September, 1974. This area is being used for outdoor education, but the land has been designated for recreational development in the near future.


LEGEND:
▲ University Biological Research and Teaching Area.
△ Agricultural Research Stations.
● Forestry or Wildlife Research Station
○ School Outdoor Education Centre
Uranium City
Ile-à-la Crosse
La Ronge
Creighton
Candle Lake Forestry Field Station
Fairy Island
Prince Albert
Melfort Research Station
Scott Research Station
St. Denis
SASKATOON
Saskatoon Research Station
Yorkton
Camp Cache
Matador
Swift Current Research Station
Swift Current
Moose Jaw
The Turn
REGINA
Regina Research Station
Indian Head Research Station
Strawberry Lake
Cypress Hills

SASKATCHEWAN DEPARTMENT OF THE ENVIRONMENT POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN RESEARCH AND TEACHING AREAS IN SASKATCHEWAN	4-20

H. Water and fisheries[*]

1. Legislation

Because of inadequacies in *The BNA Act*, there is considerable potential for conflicts over jurisdiction regarding water between the federal and provincial governments. If federal jurisdiction extended only to those matters specifically designated by the Act, it would include navigation, fisheries, international and coastal waters and "lands set apart for general public purposes".

As the federal government is responsible for interprovincial transportation, there is the implication that it has some degree of jurisdiction over all navigable interprovincial waters. Federal jurisdiction over criminal law could imply jurisdiction over pollution control, including water pollution. The residual power of *The BNA Act* permits Parliament to "make laws for the Peace, Order and Good government of Canada in relation to all matters not coming within the classes of subjects by this Act assigned exclusively to the Legislation of the Province". The conflict arises because the provinces have jurisdiction over "local works and undertakings" and "all matters of a merely local or private nature in the province".

(i) Federal legislation

In an effort to remove some potential areas of conflict, the federal government introduced the *Canada Water Act* in 1970. This Act:

(1) empowers the federal government to make agreements with the provinces to provide for comprehensive water resource quality management projects relating to any waters in which there is "a significant national interest;" and

(2) authorizes the federal government to undertake unilaterial management projects in respect of any inter-jurisdictional, international or boundary waters, if "all reasonable efforts to achieve co-operation within the province have failed."

The federal government, therefore, has the power to initiate projects within the provinces whether the waters involved are situated wholly within a single province or not. It also has the power to undertake unilateral action in respect to boundary waters.

Other federal Acts which affect water to some extent are:

(a) *The International Boundary Water Treaty Act*, 1970 (IJC).

This Act states that no uses, obstructions or diversions may be constructed in Canada which would affect the natural level or flow of water in the United States without the consent of Canada and of the International Joint Commission established under the Treaty.

(b) *The International Improvement Act*, 1970.

This Act imposes controls on international river improvements that would increase, decrease, or alter the natural flow of the international river or interfere with, alter or affect the actual or potential use of the river outside Canada.

(c) *The Navigable Waters Protection Act*, 1970.

This Act prevents obstruction of navigable waters, governs placement of structures on or in such waters and forbids dumping of material liable to interfere with navigation in navigable waters or streams flowing into such waters.

(d) *The Fisheries Act*, 1970.

This Act provides that the federal government has full legislative jurisdiction over coastal and inland fisheries of Canada. All laws for protection, conservation and development of these fisheries resources are enacted by Parliament. The basis legislation is *The Fisheries Act* of 1970, which consolidated, amended and updated previous legislation. Management of fisheries, however, is shared with the provincial governments, to which administrative responsibilities have been delegated.

There are two federal-provincial agreements related to water sources in Saskatchewan:

(1) The Natural Resources Transfer Agreement, 1930, states that water rights and water power are vested in the province.

(2) The Prairie Province Water Board Master Agreement on Apportionment, 1969, made between Canada, Saskatchewan, Alberta and Manitoba, stipulates the apportionment of water among these three provinces.

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[*] The material for the section was derived primarily from:

T. L. Burton, *Natural Resource Policy in Canada* (Toronto: McClellan and Stewart Ltd., 1972).

Canada-Saskatchewan-Manitoba, *Report of the Qu'Appelle Basin Study Board*, 1972.

Environment Canada, *Canada Water Year Book 1975* (Ottawa: Information Canada, 1975).

A. H. Paul, "Water Resources in Southern Saskatchewan," in *Background Papers Southern Prairies Field Excursion*, A. H. Paul, E. H. Dale, and H. Schlichtman, eds. Prepared for the 22nd Congress of the International Geographical Union (University of Saskatchewan, Regina Campus: Department of Geography, August 1972), pp. 129-149.

J. Howard Richards and K. I. Fung, *Atlas of Saskatchewan* (Saskatoon: University of Saskatchewan, 1969), pp. 61-68, 83-84, and 143-146.

Table 4-73

Legislation related to water quality, water resources management, and water pollution

Federal legislation

Canada Shipping Act
Navigable Waters Protection Act
National Parks Act
Migratory Birds Convention Act
Canada Water Act
Fisheries Act

Saskatchewan legislation

The Water Rights Act
The Irrigation District Act
The Private Ditches Act
The South Saskatchewan River Irrigation Act
The Watershed Association Act
The Water Supply Board Act
The Ground Water Conservation Act
The Municipal Water Assistance Act
The Water Users Act
The Water Power Act
The Department of the Environment Act
The Water Resources Management Act
The Pollution (By Livestock) Control Act
The Water Pollution Control Assistance Act
The Northern Saskatchewan Conservation Board Act
The Planning and Development Act

(ii) Saskatchewan legislation

Effective management of water depends upon effective water laws. The three most significant Saskatchewan Acts pertaining to the management of water are:

(1) *The Water Resources Management Act*, R.S.S. 1978, c.W-7

(2) *The Water Rights Act*, R.S.S. 1978, c.W-8

(3) *The Ground Water Conservation Act*, R.S.S. 1978, G-8.

The Planning and Development Act is also significant with respect to lands associated with water.

The three water Acts are administered by the Department of the Environment. *The Water Resources Management Act* makes the Department responsible for overall policy formulation and planning in the field of water management. The Department thus has a basic co-ordinating and advisory function. Under the Act any given project may be designated as a multi-purpose project, and the Department is then required to become directly involved in co-ordination of research, investigation and planning required for its development and operation. The South Saskatchewan River Project is the best-known example.

Other duties of the Department respecting water include advising the government on all matters related to water resources, responsibility for research and the collection of basic data, control of water pollution, and administration of water resources under *The Water Rights Act*.

The Water Rights Act requires all users of water to acquire a licence. The single exception is the right of a riparian owner or occupier to water for his or her own domestic use. The Act recognizes an order or priority among uses. This facilitates modification in the public interest of the strict prior appropriation system of rights that would otherwise prevail (licensees holding licences issued earliest have priority). In 1961 *The Water Rights Act* was applied to ground water as well as surface water. Another significant amendment to the Act in 1961 was the specific inclusion of recreation, flood control and wildlife under the heading "other purposes" of water use. Non-consumptive uses, in other words, were legally recognized as purposes to which water might be allocated.

The Ground Water Conservation Act was passed in 1959. Its basic aim is to provide for acquisition of information vital to an orderly program of ground water use in the province. Water well drillers must be licensed, and they must report geological and ground water data from every well drilled.

The three Acts outlined above thus provide for overall co-ordination of water resources in Saskatchewan, for a method of allocating water to its various uses and for progress towards a more effective integration of ground water utilization within the complete framework of water management. Various other Acts, which relate less directly to the water resources of the province, are listed in Table 4-73.

2. Lakes, rivers and reservoirs

As stated in Chapter 2, Saskatchewan contains numerous lakes, rivers, reservoirs and other water bodies, which account for roughly 81,632 km² (almost 11 per cent) of Canada's 756,280 km² of fresh water. Most of Saskatchewan's fresh water is concentrated in the northern part of the province.

Lakes perform a valuable function in storing water during times of plenty and releasing the stored water during times of need; at the same time, they regulate the flow of the rivers on which they are located. A complete inventory of all of Saskatchewan's lakes is not feasible. However, Saskatchewan does contain five major lakes that have a total gross area of over 1,000 km². Table 4-74 lists these five lakes, their total area, their maximum length and their elevations.

Rivers have played an important role in the province's short history. Used initially as a mode of transportation, they are now used for water power, irrigation, recreation, domestic and industrial supply and other purposes. Table 2-11 lists 11 major Saskatchewan rivers and their annual average flows.

Table 4-74

Major lakes of Saskatchewan

Lake	Gross area (km^2)	Max. length (kilometres)	Elevation (metres)
Athabasca	7,935	283	213
Reindeer	6,638	232	337
Wollaston	2,680	142	398
Cree	1,434	80	487
Lac La Ronge	1,414	64	364

Source: Environment Canada, *Canada Water Year Book 1975*, Ottawa: Information Canada, 1975, p. 65.

Since early settlement individual farmers have created small reservoirs by constructing dugouts and small dams in order to conserve local runoff for domestic water, stock watering and irrigation. In later years, large reservoirs for water storage have been built with PFRA assistance on numerous prairie streams, and much larger works have been undertaken in some of the basins. *The Canada Water Year Book — 1975* states that Saskatchewan has 40 large dams within its boundary (large dams refer to dams 15 metres in height or over). The largest Saskatchewan dam is Gardiner Dam, which has a height of 68 metres and a reservoir capacity in Lake Diefenbaker of 9,868 million cubic metres. Table 4-75 lists reservoirs in Saskatchewan which cover areas of more than 12,335 cubic metres at their full supply level.

3. Land associated with water

(i) Flood plains

Flood plains have always been attractive as sites for development of transportation, industry, residential development and agriculture. Because of this and the ease with which construction can be carried out, flood plain land proves unusually attractive to people wishing to undertake enterprises which have low initial costs — that is, low in comparison with the initial cost of alternative locations.

Floods are "chance occurrences". It is impossible to predict in advance what the flow of a river will be in any given year, and even short-term forecasts of spring flows (based on conditions such as accumulated snowpack and soil moisture) are highly speculative.

Table 4-75

Saskatchewan reservoirs having a surface area greater than one thousand acres at full supply level

Applicant (under The Water Rights Act)	City/town project	Water basin	Area in acres
Saskatchewan Department of Agriculture	Lake Diefenbaker	South Saskatchewan	108,000
No Applicant	Tobin Lake	Saskatchewan	75,000
Ducks Unlimited	Waterhen Marsh	Saskatchewan	3,777
Nut Lake Watershed Association Board	Kelvington	Red Deer	3,700
Prairie Farm Rehabilitation Administration	Duncairn	South Saskatchewan	3,600
Saskatchewan Department of Agriculture	Opuntia Lake	North Saskatchewan	3,445
Saskatchewan Water Supply Board	Blackstrap Lake	South Saskatchewan	3,334
Ducks Unlimited	Pel Lake	Qu'Appelle	3,050
Ducks Unlimited	Cartier Marshes	Churchill	2,857
Prairie Farm Rehabilitation Administration	Thomson Reservoir	Missouri	2,360
Jackson Lake Watershed Association Board	Meota	North Saskatchewan	2,240
Ducks Unlimited	Bell Lake	North Saskatchewan	1,815
Ducks Unlimited	Mistatim	Red Deer	1,700
Ducks Unlimited	Onion Lake	North Saskatchewan	1,541
Saskatchewan Power Corporation	Boundary Reservoir	Souris	1,480
Ducks Unlimited	Blackfoot Lake	Churchill	1,471
Prairie Farm Rehabilitation Administration	Middle Creek	Missouri	1,300
Saskatchewan Water Supply Board	Broderick	South Saskatchewan	1,290
Ducks Unlimited	Oliver Slough	Churchill	1,286
Prairie Farm Rehabilitation Administration	Highfield	South Saskatchewan	1,222
Prairie Farm Rehabilitation Administration	Junction Reservoir	Cypress	1,150
Ducks Unlimited	St. Cyr Lake	Churchill	1,107
Prairie Farm Rehabilitation Administration	Maxim Lake Project	Souris	1,105
Prairie Farm Rehabilitation Administration	Moose Mountain	Souris	1,100
Ducks Unlimited	Campbell	Qu'Appelle	1,055
Ducks Unlimited	Eagle Lake	Churchill	1,025
Saskatchewan Water Supply Board	Zelma	Qu'Appelle	1,025

Predictions of streamflow over the long-term, based on knowledge of streamflows in preceding years, are stated in terms of the probability of a given rate of flow occurring in any one year, expressed as a percentage. Thus we speak of flows or flood with a two per cent chance, or one chance in 50 (1:50) of occurring in any one year. Such a flood is referred to as a one in 50-year flood. This can be misleading, for while it is highly probable that such a flood will occur once in 50 years, there is also the chance that it will occur in any year.

In a flood situation the water level rises as the streamflow increases, and once the channel capacity of the stream is exceeded water flows over the banks, inundating the flood plain. Damage occurs during such times.

Although much money is spent on flood protection works, the amount of damage attributed to floods continues to rise. The explanation for this paradoxical situation, of course, is that more property value is continually being placed in the flood plain. In addition, land development and channel improvement upstream contribute to downstream floods. In recent years, people have become increasingly aware of this situation, as the populated areas of southern Saskatchewan experienced a number of costly floods between the years 1967 and 1974. Most of the flood damage has occurred in two river basins, the Souris and the Qu'Appelle. The Qu'Appelle Basin Report was issued in1972, and detailed information and recommendations were included in the subsequent 1974 Wascana Creek and Moose Jaw River Studies. A study of the Souris River Basin was completed in 1978.

Reports of the effects and damages from past floods are limited. Estimated damages of almost $250,000 occurred as a result of the 1969 Qu'Appelle Flood. Costs resulting from the 1971 flood on Wascana Creek in Regina have been estimated at approximately $400,000, and compensation payments for damages resulting from the 1974 flood were $6.3 million.

In consideration of the 1971 flood, the Qu'Appelle Basin Study recommended:

> ". . . that no flood control works be built or any further development or construction be undertaken on the flood plain of the Wascana Creek until plans for adjustment to the flood hazard have been developed and adopted."

Pressures for residential development, encroachment of the flood plain since the 1971 flood, and some actual development made it even more evident that an overall plan for the management and development of the Wascana Creek flood plain was required. Accordingly, the provincial and federal governments agreed to undertake an assessment of the flood situation with a view to formulating a management plan that would make adequate provisions for coping with future floods.

Recent revisions to *The Water Resources Management Act* enable a comprehensive and co-ordinated approach that will ensure the safe, efficient use of flood hazard areas and avoid the danger, damage, disruption and public expenditures which result from flooding. It should be noted that under the provisions of *The Planning and Development Act*, appropriate land use planning and development control can already be achieved by local governments through the zoning mechanism.

(ii) Shorelands

The shoreland of a lake can be defined as that land area which extends one mile back from the mean water elevation. The shoreline is the line that connects all points at which the mean water level meets the shoreland, that is, the shoreland/lake interface.

Shorelands represent a valuable resource for various land uses in Saskatchewan. Perhaps the most significant shoreland use is outdoor recreation. Good quality shoreland for outdoor recreation purposes is limited, especially in southern Saskatchewan. There have therefore been conflicts over shoreland use and development.

Most early shoreland development was unplanned; development occurred in a generally haphazard, piecemeal manner, with each proposal being considered separately and without reference to any development plan outlining the amount and distribution of various shoreland uses of a lake. Basically, shoreland development has followed one mode, that of linear development. This obviously places lakeshore lots at a premium, and the result is that there is now a scarcity of high-quality shoreline available for public use. Such development has had other detrimental effects as well: health standards are low, aesthetic quality is questionable, beach areas with a high capacity for public use have been effectively closed to the public by private backshore development, prime wildlife habitat (terrestrial and aquatic) has been destroyed, the quality of water supplies has declined and conflicts over land use priorities have occurred between various interest groups because of the lack of zoning plans or bylaws.

The Qu'Appelle Valley is an area in which the demand for shoreland is high while the supply is limited. It is estimated that the population within the Qu'Appelle River Basin in 1972 was approximately 280,000 persons. By the year 2000, it is estimated that it will be 320,000 persons. For recreation, this population relies primarily on the eight major lakes within the basin. The amount of shoreland around these lakes is given in Table 4-76.

Total shoreline around these eight lakes is only 568 km. The critical importance of shorelands is indicated by the fact that the Qu'Appelle basin encompasses almost 13 million acres, of which only 685 acres are Class 1 recreation land.

(iii) Land areas designated under The Water Resources Management Act

Aspects of land use planning have been initiated under *The Water Resources Management Act*. Subject to the approval of the Lieutenant-Governor in Council, the Minister of the Environment may make regulations in respect to referred projects (Sections 13 and 14) and reservoir development areas (Section 22).

(a) Referred projects

In referred project areas, the Minister co-ordinates and approves all research, investigation, planning and development with respect to water and land use within the river basin and recommends methods for achieving the best use of the water and land resources. Three referred projects have come into effect through Orders-in-council under this Act:

Table 4-76

Major lakes of the Qu'Appelle Basin

Lake	Amt. of shoreline in km
Buffalo Pound	72.6
Last Mountain	351.5
Pasqua	38.8
Echo	16.7
Mission	13.8
Katepwa	26.1
Crooked	28.6
Round	20.3
Total	568.4

Source: R. P. Johnson and F. M. Atton, *The Regional Limnology of the Qu'Appelle Drainage System, Saskatchewan* Fisheries Report No. 10, (Saskatchewan Department of Natural Resources: Fisheries Branch, 1970), p. 22.

(1) Souris River Basin
(2) Churchill and Reindeer River Basin
(3) Qu'Appelle River Basin.

(b) Reservoir development areas

The Minister may make regulations in reference to lands around designated reservoirs. These regulations concern the:

(1) safe and efficient use of reservoirs and the waters within them;

(2) use and control of land within a reservoir development area; and

(3) protection of the habitat of wild animals and birds, of waterfowl sanctuaries, and of afforested or improved lands.

Details about these reservoir development areas are given in Table 4-77 and on Figure 4-21.

(iv) Water associated land areas zoned under The Planning and Development Act

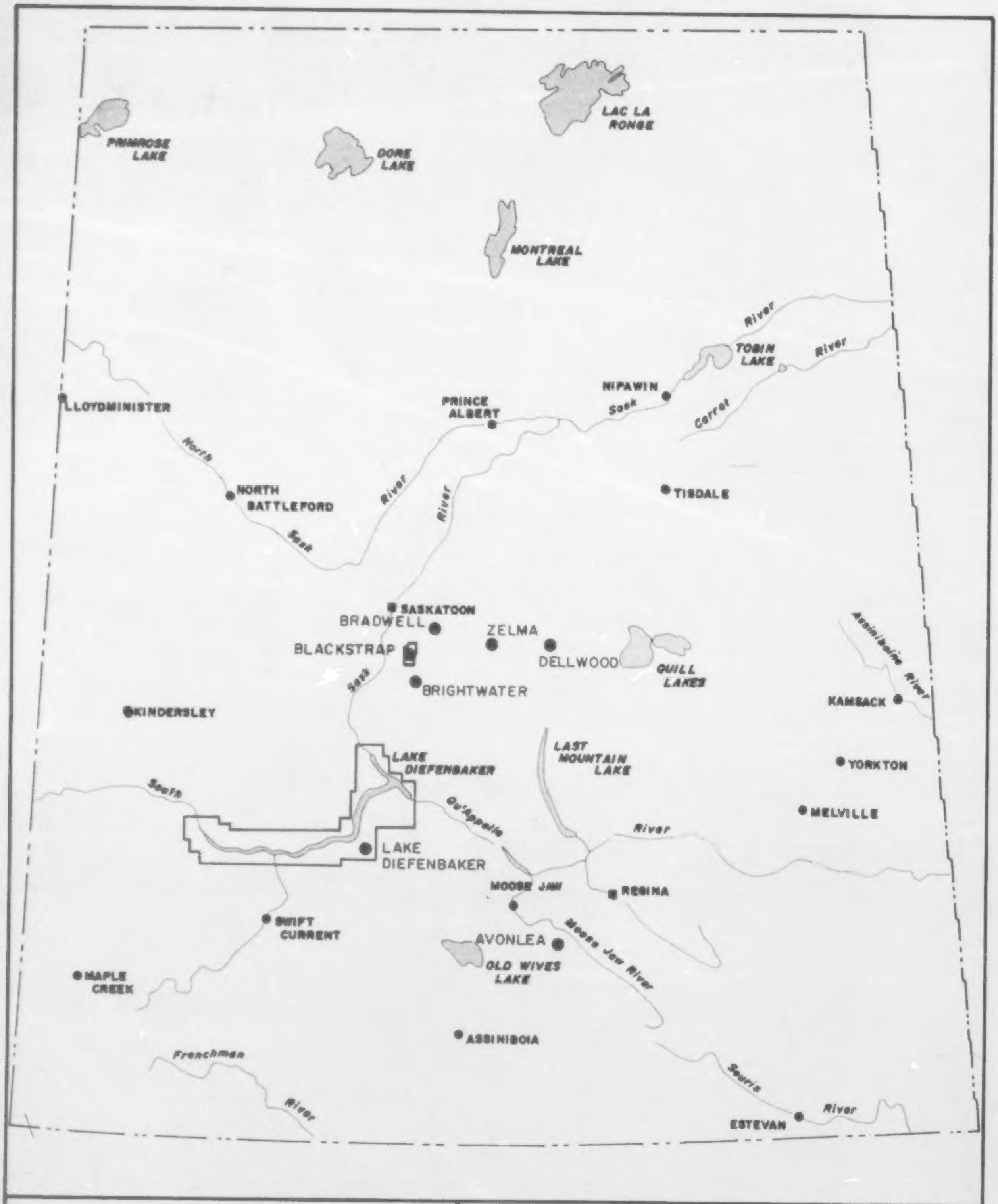
As indicated earlier, the zoning mechanism can be used to control land use and development in flood plains. Moose Jaw, for example, developed a zoning bylaw which reflects the flood plain hazard. Zoning can also be used to control land use and development within shorelands. The Rural Municipality of Sarnia No. 221 passed such a zoning bylaw in 1974 in order to obtain development control over the resort areas and the shoreland of part of Last Mountain Lake. Under this bylaw two zoning districts were established, the Agricultural District and the Summer Resort District. The Summer Resort District allows for cottage development at Sarnia Beach, Lipp's Beach, Lasal Bay Beach, Weetoo Beach, Griffith and Gardiner Beaches and Alice Beach. These beaches occupy about 6.3 per cent of the shoreline of Last Mountain Lake within the Rural Municipality of Sarnia. The remainder is zoned as an Agricultural District, which permits only agricultural and associated land uses and open space recreational land uses.

Table 4-77

Reservoir development areas

Reservoir development area	General location	Size (including water surface)	
		Acres	km²
Avonlea	Tp. 11 and 12, R. 22-23 W2 3 miles SE of Avonlea	3,040	12.30
Blackstrap	Tp. 32-33, R. 3-4 W3 30 miles SE of Saskatoon	19,806	80.13
Bradwell	Tp. 34, R. 2 W3 2 miles SE of Bradwell	1,920	7.77
Brightwater	Tp. 30, R. 4, W3 4 miles SW of Hanley	5,760	23.31
Dellwood	Tp. 32-33, R. 24 W2	4,960	20.07
Lake Diefenbaker	Extending from Tp. 19 to 27, R. 3 to R. 20 W3	1,390,080	5,625.49
Zelma	Tp. 33, R. 27-28 W2 2 miles E of Zelma	4,853	19.63
Total		1,430,419	5,788.70

Derived from Saskatchewan Department of the Environment, *General Plans of Reservoir Development Areas*, 1976.


PRIMROSE LAKE
DORE LAKE
LAC LA RONGE
MONTREAL LAKE
River
TOBIN LAKE
River
NIPAWIN
Sask
Carrot
LLOYDMINISTER
PRINCE ALBERT
North
NORTH BATTLEFORD
River
River
Sask
TISDALE
SASKATOON
BRADWELL
ZELMA
BLACKSTRAP
DELLWOOD
QUILL LAKES
Sask
BRIGHTWATER
Assiniboine River
KAMSACK
KINDERSLEY
LAST MOUNTAIN LAKE
LAKE DIEFENBAKER
YORKTON
South
Qu'Appelle
River
MELVILLE
LAKE DIEFENBAKER
MOOSE JAW
REGINA
SWIFT CURRENT
Moose Jaw River
AVONLEA
OLD WIVES LAKE
MAPLE CREEK
ASSINIBOIA
Frenchman
River
Souris
River
ESTEVAN

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LAND USE IN SASKATCHEWAN
RESERVOIR DEVELOPMENT AREAS
IN
SASKATCHEWAN

FIGURE
4-21

Table 4-78

Commercial fish production in Saskatchewan 1976-77 (kilograms)

	Commercial	Brine shrimp and eggs	Fish bait	Franchise	Domestic and free Indian	Fur farm	Total
DTRR Administration	1,508,464	15,731	18,009	5,243	34,473		1,581,920
DNS Administration	3,410,420		4,025		107,955	205,023	3,727,424
Total	4,918,884	15,731	22,034	5,243	142,428	205,023	5,309,344

Sources: Saskatchewan Department of Northern Saskatchewan, *Annual Report*, 1976-77, p. 16.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1977, p. 33.

Table 4-79

Fish stocking in Saskatchewan 1976-77

DTRR administration				DNS administration	
Age	Species	Water areas stocked	Number	Species	Number
Fry	Walleye	44	13,700,000		
	Whitefish	3	11,130,000		
Fingerling	Brook Trout	37	91,200	Pickerel	2,450,000
	Brown Trout	15	30,400	Brook Trout	39,000
	Rainbow Trout	48	378,550	Rainbow Trout	256,600
				Brown Trout	6,500
Yearling	Brook Trout	1	150	Whitefish	4,020,000
	Rainbow Trout	2	2,100		
Adult	Northern Pike	5	795		
	Perch	4	4,050		
Total	7 species	159	25,337,245	Total	6,772,100

Sources: Saskatchewan Department of Northern Saskatchewan *Annual Report*, 1976-77, p. 16.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1977, p. 33.

4. Products from water

Measurable products obtained from Saskatchewan waters are limited to fishery products and hydroelectric power.

(i) Fish

Sport fishing and commercial fishing are the two largest user groups of the fisheries resource. Commercial operations accounted for a harvest figure of 4.9 million kg of fish during the 1976-77 fiscal year. Administration of commercial fisheries in the north has been transferred to the Department of Northern Saskatchewan, and it is this area that accounts for the bulk of the commercial fish harvest.

In 1976-77 approximately 186 lakes in the Department of Northern Saskatchewan region were commercially fished, yielding a harvest of 3.4 million kg. In the southern area, 26 lakes yielded a harvest of 1.5 million kg. In addition to this commercial harvest, domestic fishing, native fishing, bait fisheries, fur farms and a brine shrimp operation accounted for a harvest of 390 thousand kg of fisheries products. Table 4-78 shows total lake production figures for both southern and northern regions of Saskatchewan.

Fish farming in southern Saskatchewan produced 13,080 kg of rainbow trout as a result of stocking farms with 893,000 fingerlings. Fish farms were not the only areas stocked; a total of 159 southern lakes were stocked in 1976-77 with 25,337,245 fry, fingerlings, yearlings and adult fish, while 42 northern lakes were stocked with 6.7 million fingerlings. Table 4-79 indicates the species and number of fish stocked in Saskatchewan waters during 1976-77.

The Department of Tourism and Renewable Resources is responsible for administration and management of sport fisheries. Unfortunately, no harvest figures or reaction user days are available for this activity.

Table 4-80

Hydroelectric power generated in Saskatchewan, 1972 to 1976

Year	Production (kilowatt hours)
1972	3,137,565,000
1973	2,485,298,100
1974	3,138,489,600
1975	2,712,832,000
1976	2,470,212,100

(ii) Hydroelectric power

Of the five hydroelectric power stations in Saskatchewan, three are owned by private industry in the northern part of the province to generate power for mining operations. Two other plants are owned and operated by the Saskatchewan Power Corporation (see Figure 4-22). These five hydroelectric stations have the potential to generate 664,000 horsepower.

Electrical energy generated by Saskatchewan hydroelectric plants totalled 2,470,212,100 kilowatt hours in 1976. Table 4-80 shows total hydro power generated from 1972 to 1976.

5. Economic returns

(i) Fisheries

Economic returns from the fisheries resource include revenue from licence sales (which the provincial government receives) and the value of the product (which the commercial operators receive). In 1976-77, the provincial government received $751,854.50 from licence sales.

Most of this revenue ($733,626) was obtained from the sale of angling licences for sport fishing. Commercial operations in the northern area accounted for most of the remaining revenue; southern operators only spent $6,100 for licence fees in 1976-77. Table 4-81 shows licence sales and revenue received for both southern and northern Saskatchewan in 1976-77. A comparison of angling licence sales for the years 1974 to 1976 indicates an increased interest in this form of recreation (see Table 4-81).

Commercial operators realized a lake value of $2,769,643.16 for their efforts during 1976-77. Of this, northern fishermen made $2,100,443.55, or about three quarters of the total. It is interesting to note that the administration of the Department of Northern Saskatchewan has applied a market value as well as a lake value to the fish taken. This market value is double the lake value received by commercial fishermen (see Table 4-82).

In addition, economic returns realized through commercial bait fisheries operations were $105,314 during 1976-77.

(ii) Hydroelectric power

As water is considered to be a provincial Crown owned resource, a rental is charged for use of water at installations which generate hydroelectric power. This rental is based on the amount of electrical energy generated each year. The calendar year of 1976 saw a decrease in the amount of energy produced from 1975.

Water rental revenue was $510,278 for 1976. This compares to $560,166 received in 1975-76 and to $647,691 received in 1974-75.

(iii) Other sources of revenue

Users of Saskatchewan's ground water and surface water resources are required to pay a set fee for a licence which authorizes them to use this resource. In addition, they are required to pay for the water used. The latter cost varies depending on the amount used and where the water comes from. In 1976-77, the provincial government received $7,273.00 from ground water and water rights licence fees. In addition, $147,635 was paid for water actually used. In 1975-76, licence fees accounted for $6,466, while usage fees ($159,856) were about $12,000 more than in 1976-77.

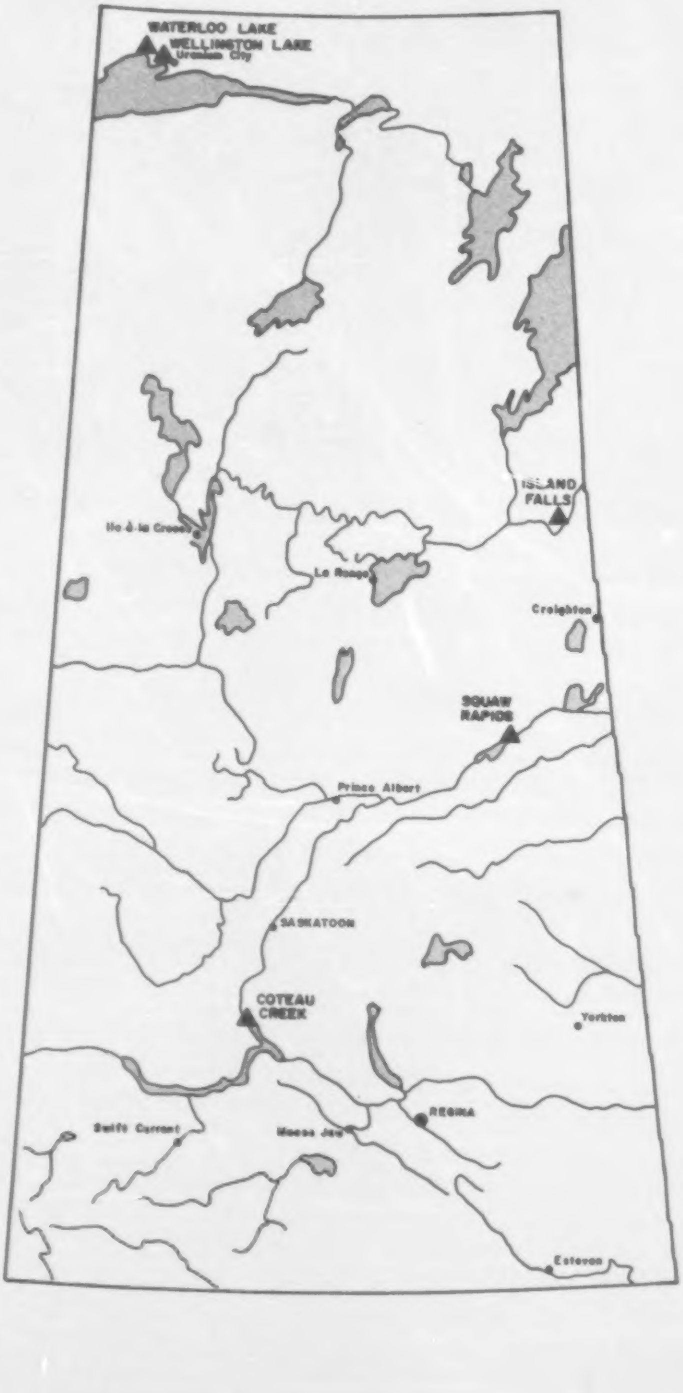
There is no charge for the domestic use of Saskatchewan water recources.

6. Use and users of water

Although Saskatchewan's population has not changed markedly in recent years, there have been important changes in the pattern of water use. These in turn have altered public attitudes towards water. These factors, together with the growing concern about environmental quality, can perhaps explain administrative and legislative changes in water resources management which are now being made.

In agriculture, water demand has increased because of the recent growth in irrigated land area, especially that associated with the South Saskatchewan River Project, and the increase in livestock. The number of non-dairy cattle in the province, for example, has grown from 945,500 in 1950 to over three million in 1977. This has resulted not only in an increase in the amount of water consumed, but also, because of the trend toward intensive livestock operations or feedlots, in a need to provide relatively large supplies of water at given locations.

Use of water in urban development in Saskatchewan has also increased. Growth of the two major cities, Regina and Saskatoon, has led to problems in providing an adequate municipal supply and in disposing of municipal wastes. The population of Regina, for instance, grew from 71,319 in 1951 to 159,260 in 1976, and the load of treated effluent discharged by the city into Wascana Creek and ultimately into the Qu'Appelle River has increased accordingly. The portion of the Regina water supply drawn from Buffalo Pound Lake rather than from local ground water has risen steadily.


WATERLOO LAKE
WELLINGTON LAKE
Uranium City
ISLAND FALLS
Ile-à-la Crosse
La Ronge
Creighton
SQUAW RAPIDS
Prince Albert
SASKATOON
COTEAU CREEK
Yorkton
REGINA
Swift Current
Moose Jaw
Estevan

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LAND USE IN SASKATCHEWAN
HYDROELECTRIC POWER STATIONS
IN
SASKATCHEWAN

FIGURE
4-22

Table 4-81

Fisheries licence sales in Saskatchewan

DTRR administration

Fisheries licences	Cost of licences	1974-75 Number sold	1974-75 $ Revenue	1975-76 Number sold	1975-76 $ Revenue	1976-77 Number sold	1976-77 $ Revenue
Sport							
Resident	$3.00	152,222	$1,456,666	156,992	$470,976	175,952	$527,856
Non-Resident	10.00	17,815	178,150	20,330	203,300	20,577	205,770
Total		170,037	$634,816	177,322	$674,276*	196,529	$733,626*
Commercial							
Fish dealer	$250.00	1	$250	2	$500	1	$250
Processing plant	25.00	1	25	2	50	1	25
Commercial net	5.00	949	4,745	1,018	5,090	897	4,485
Franchise	5.00	—	—	$	5	1	5
Brine shrimp net	15.00	8	120	9	135	9	135
Bait fish	15.00	15	225	18	270	23	345
Fish farm							
Private	no chg.	2,370	—	2,492	—	2,409	—
Commercial	15.00	42	630	46	690	57	855
Total	3,386.00	479	$5,995	3,588	$6,740	3,398	$6,100
Domestic							
Domestic net	$2.00	479	$958	384	$768	472	$944

*Includes vendor's commission

Licence sales 1976-77

DNS administration

	Licences	Cost of number sold	1976-77 Revenue
Commercial			
Commercial net	*$5.00	1,408	$9,210.00
Bait fish	15.00	19	285.00
Fur farm	based on no. of breeders	9	973.50
Fisherman dealer	5.00	28	140.00
Total		1,464	$10,608.50
Domestic			
Domestic net	$2.00	288	$576.00

* Cost of licence $5.00 per year per 1,000 yards of net used.

Sources: Saskatchewan Department of Northern Saskatchewan, *Annual Report*, 1976-77.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1977.

Table 4-82

Commercial fish production and value

DTRR administration

Species	1976-77 Weight taken (kg)	1976-77 Lake value	1975-76 Weight taken (kg)	1975-76 Lake value	1974-75 Weight taken (kg)	1974-75 Lake value
Whitefish	455,896	$446,506.05	450,547	$454,140.70	411,355	$371,879.88
Walleye	28,711	43,719.80	18,926	25,488.48	16,213	19,108.52
Pike	36,721	25,712.45	13,159	6,958.16	13,701	6,313.26
Trout	1,415	3,119.00	2,672	4,381.16	1,244	2,422.95
Tullibee	454,100	61,877.60	480,913	55,063.99	562,325	65,614.40
Other	531,621	78,264.71	430,550	52,346.43	636,212	78,369.55
Total	1,508,464	$659,199.61	1,396,767	$589,378.93	1,641,051	$543,726.76

DNS administration

1976-77 fisheries production

Species	Weight taken	Lake value	Market value
Whitefish	1,514,654	$ 784,755.14	$1,569,510.28
Pickerel	602,716	766,551.87	1,533,103.74
Trout	511,531	275,624.70	551,249.40
Pike	653,275	242,967.21	485,934.42
Other	128,244	40,544.63	81,089.26
Total	3,410,420	$2,110,443.55	$4,220,887.10

Sources: Saskatchewan Department of Northern Saskatchewan, *Annual Report*, 1976-77, p. 16.

Saskatchewan Department of Tourism and Renewable Resources, *Annual Report*, 1977, p. 33.

The industrial sector of the southern Saskatchewan economy is relatively meager when compared with that of other regions of Canada. Industries located in urban centres may take their water from municipal intake systems and dispose of their effluent through municipal waste treatment plants. In 1976-77, $147,636 was received under the Industrial Water Charges Policy from industries withdrawing water directly from a source other than a municipal water system. While industrial withdrawal of water is modest, use of water as a medium for industrial waste disposal has caused some local difficulties.

Recent rapid expansion in recreational use of water in southern Saskatchewan has led to a number of conflicts in management. The problem is particularly acute in the lakes of the Qu'Appelle Valley, which are subject to heavy use by residents of Regina and Moose Jaw. Summer cottaging, swimming, boating, fish and wildlife are stongly affected by water quality and lake levels. Management of the lakes for various other purposes, including municipal water supply and storage to control spring floods, must also be accommodated. Conflicts have developed along the Saskatchewan River system too, primarily between generation of hydroelectric power and wildlife preservation, recreation and fisheries.

More information on users of water is given below.

(i) Fisheries

A record high of 196,529 angling licences were sold during the 1976-77 fishing season, an increase of over 19,000 licences over the previous year.

In commercial operations, 2,305 licences were issued during the 1976-77 fiscal year. A total of 783 fishermen in the Northern Administration District received 1,408 licences. In the remainder of the province 897 commercial fishing licences were issued.

Other operations relying on the fisheries industry included nine fur farm operators, 21 individuals employed in 23 bait fishing operations, 472 domestic fishing operations, 2,466 fish farms (of which 57 are commercially operated), and 145 native people who received free Indian fishing permits from the Department of Tourism and Renewable Resources. No figures on free Indian permits were available from the Department of Northern Saskatchewan. Table 4-81 shows the actual number of licences sold.

Table 4-83

Hydroelectric water use licences

Location	Island Falls	Wellington Lake	Waterloo Lake	Squaw Rapids	Coteau Creek
Licensee	Churchill River Power Company	Eldorado Nuclear Limited	Eldorado Nuclear Limited	Saskatchewan Power Corp.	Saskatchewan Power Corp.
Expiry	April 1, 1981	July 1 1 979	December 1, 1981	To be determined	To be determined
Capacity	125,000 H.P.	6,600 H.P.	10,000 H.P.	396,000 H.P.	252,000 H.P.
Water supply	Churchill River	Charlot River	Charlot River	Saskatchewan River	South Saskatchewan River
Power use	Flin Flon Mines	Eldorado Nuclear Mines	Eldorado Nuclear Mines	Saskatchewan grid	Saskatchewan grid
Power generated (1976)	633,738,100 K.W.H.	30,545,000 K.W.H.	33,956,000 K.W.H.	935,380,000 K.W.H.	826,593,000 K.W.H.

Source: Saskatchewan Department of the Environment, *1977 Annual Report*, p. 46

(ii) Hydroelectric power

Of the five hydroelectric plants within Saskatchewan, three were established primarily for use by mining companies. At present Flin Flon Mines is the principal user of power from the Island Falls hydroelectric plant, and Eldorado Nuclear Mines is the principal user of power from both the Wellington Lake and Waterloo Lake plants (see Table 4-83). Squaw Rapids and Coteau Creek hydroelectric plants supply power to the Saskatchewan grid.

(iii) Other sources

Saskatchewan's surface water is used for a variety of purposes. Stock watering, municipal, industrial, irrigation, wildlife and recreational purposes are just some of the uses made of this resource. At the end of the fiscal year 1976-77, 9,860 projects had been licenced.

The ground water of our province is also used for such things as industry, municipal purposes and livestock. In order to get at the ground water supply, wells must be drilled, and for this procedure a licence is required. No licence is required to pump water for a farmer's own home supplies. In 1976 applications were received to construct 51 wells. Sixty-one wells were authorized to commence construction, and licences were issued for 74 wells. At the end of the year there were 819 licenced wells in the province.

Table 4-84, although taken from a 1976-77 annual report, gives a fairly up-to-date listing of all authorized and licenced water development projects under *The Water Rights Act* to March 31, 1977.

I. Mineral lands[*]

1. Legislation

Section 109 of *The British North America Act* of 1867 gives the provinces exclusive ownership of all lands, mines, minerals and royalties. In Saskatchewan, mineral resources came under provincial control in 1930 as part of *The Natural Resources Transfer Agreement Act*. Although the transportation of these materials out of the province is subject to federal jurisdiction, utilization and management of mineral resource, including oil and natural gas, fall within provincial jurisdiction.

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[*] The material for this section was derived primarily from:

Saskatchewan Department of Mineral Resources, *Inventory and Outlook of Saskatchewan's Mineral Resources*, September, 1976.

Saskatchewan Departments of the Environment and Mineral Resources, *The Rehabilitation of the Mining Environment in Saskatchewan: Proposed Study Program*, September, 1974.

Saskatchewan Department of the Environment, *Saskatchewan Environmental Legislation* , Policy, Planning and Research Branch, November 1976, pp. 69-79, 97-102, 153-155 and 161-162.

Table 4-84

Drainage basins showing all authorized and licensed water development projects under the provisions of the Water Rights Act to March 31, 1977

Sub-basin report		Number of projects						
No.	Drainage basin	Domestic	Municipal	Industrial	Irrigation	Miscel-laneous	Total number of projects	Total storage*
1	Lodge Creek	53	1	0	44	1	99	25,341.1
2	Battle Creek	209	0	2	219	4	434	10,228.5
3	Frenchman River	415	1	0	227	13	656	195,028.1
4	Many Island Lake	121	1	0	38	0	160	1,558.0
5	Bigstick Lake	173	0	0	115	5	293	6,848.5
6	Hay Lake	15	0	0	14	0	29	467.9
7	Crane Lake	51	0	0	65	2	118	922.7
8	Skull Creek	25	0	0	24	2	51	3,636.2
9	Antelope Lake	37	0	2	23	4	66	1,224.4
10	Swift Current Creek	150	2	4	226	9	391	123,787.4
11	Old Wives (Johnstone) Lake	1,161	10	7	574	25	1,777	72,093.0
12	McRae Creek	17	0	0	6	0	23	383.0
13	Woodpile Creek	16	0	0	4	0	20	209.3
14	Lyons Creek	42	0	0	13	1	56	1,607.6
15	Coteau Creek	46	0	0	10	0	56	275.8
16	Whitewater Creek	143	1	1	44	2	191	2,091.2
17	McEachern Creek	48	0	0	21	0	69	867.8
18	Horse Creek	4	0	0	1	0	5	28.6
19	Rock Creek	3	0	0	1	0	4	10.9
20	East Poplar River	82	1	1	26	0	110	2,701.5
21	Poplar River	21	0	0	3	0	24	146.7
22	West Poplar River	5	0	0	4	1	10	1,212.8
23	Qu'Appelle River	735	37	23	304	67	1,166	74,849.4
24	Souris River	284	20	6	141	18	469	120,186.8
25	Manito Lake	33	0	0	6	1	40	701.2
26	Lenore Lake Group	18	2	1	17	0	38	497.9
27	Quill Lakes	37	4	1	13	12	67	14,840.7
28	Carrot River	31	8	1	27	5	72	18,300.2
29	North Saskatchewan River	464	10	10	167	43	694	66,115.8
30	South Saskatchewan River	550	20	15	296	16	897	9,378,177.3
31	Assiniboine River	81	9	3	33	17	143	22,076.8
32	Swan Lake	3	0	1	3	0	7	20.6
33	Red Deer River (Sask.)	16	7	4	6	8	41	61,510.7
34	Churchill River	9	2	1	7	12	31	28,272.1
35	Athabasca River	0	1	0	0	0	1	0.0
36	Great Sandhills Group	144	0	0	78	4	226	3,421.6
37	Willowbunch Group	211	3	1	60	7	282	5,262.6
38	Rush Lake	174	1	0	92	1	268	13,536.5
39	Wildhorse Lake	4	0	0	2	0	6	43.7
40	Climax Group	75	1	0	57	1	134	1,168.4
41	Tatis Lake	59	0	0	53	6	118	5,454.3
42	Bluff Creek	16	0	0	2	0	18	234.6
44	Paisley Brook	62	0	0	4	0	66	439.5
45	Big Muddy Lake	138	0	0	29	6	173	4,123.8
46	Missouri Group	58	1	3	22	0	84	2,887.6
48	Shoe Lake Group	32	0	0	26	3	61	524.2
49	Green Lake	1	0	0	0	0	1	20.4
50	Lower Souris River Group	15	1	0	3	0	19	360.2
53	Whitebear Lake	55	1	0	7	11	74	2,286.7
54	Coteau Group	19	0	0	4	3	26	719.0
55	Luck Lake	20	1	0	5	0	26	395.7
56	Goose Lake Group	84	0	1	37	4	126	2,948.2
57	Overflowing River	0	0	0	0	2	2	21,450.6
58	Kindersley Lake Group	294	7	3	76	17	397	13,722.7
59	Whiteshore Lake	28	0	1	12	1	42	592.7
60	Redberry Lake	14	0	0	2	3	19	3,215.9
61	Beaver River	2	0	0	1	5	8	10,459.1
64	Wollaston Lake	0	0	1	0	0	1	0.0
67	Saskatchewan River	2	1	0	0	2	5	13.9
	Totals	6,605	154	93	3,294	344	10,490	10,329,503

*Storage in cubic decametres. (1 acre-foot = 1.2335 cubic decametres; 1 dam^3 = 0.8107 acre-feet)

Source: Saskatchewan Department of the Environment, *1977 Annual Report*, for the fiscal year ended March 31, 1977, p. 35.

Table 4-85

Provincial and federal acts affecting the use of mineral lands in Saskatchewan

Saskatchewan legislation
The Department of Mineral Resources Act
The Mineral Resources Act
The Oil and Gas Conservation Act
The Sand and Gravel Act
The Land Titles Act
The Surface Rights Acquisition and Compensation Act
The Saskatchewan Oil and Gas Corporation Act
The Water Resources Management Act
The Air Pollution Control Act
The Planning and Development Act
Federal legislation
The British North America Act
Atomic Energy Control Act

The major responsibility for management of Saskatchewan's mineral resources was given to the Department of Mineral Resources by *The Department of Mineral Resources Act*, R.S.S. 1978, c.D-20. This Act provides for all administration relating to the discovery, development, utilization and conservation of Crown mineral resources. Other legislation relevant to mineral lands is listed in Table 4-85.

"Minerals" owned by the province are defined in *The Mineral Resources Act*, R.S.S. 1978, c.M-16, as "all non-viable substances formed by the processes of nature that occur on or under the surface of the ground, irrespective of chemical or physical state." Excluded from this definition are naturally occurring surface water, agricultural soil, and surface sand and gravel belonging to the owner of the surface of the land other than the Crown. Under *The Sand and Gravel Act*, R.S.S. 1978, c.S-5, the owner of the minerals and mines also owns the ceramic and industrial clays (except clay required for construction of an earthen dam or road grade) and all volcanic ash, marl and bentonite. Therefore, substances such as lignite, oil, natural gas, helium, potash, sodium sulphate, sodium chloride, base and precious metals, uranium, quartzite, bentonite, etc., are subject to legislation regulating minerals.

A distinction is made in the legislation between mineral rights or ownership and surface rights. Surface rights do not include mines and minerals on or under the surface, and the Crown may lease or grant surface rights (under *The Land Titles Act*) while retaining ownership of the mines and minerals. Furthermore, *The Surface Rights Acquisition and Compensation Act*, R.S.S. 1978, c.S-65, provides that ownership of the mineral rights does not automatically entitle the owner or operator to enter or use the surface of the land. Acquisition of surface rights for well sites, road ways, power lines, etc., is regulated under this Act.

The major aspects of mineral resources management and administration are provided for by *The Mineral Resources Act*. The purposes of this Act are as follows:

(a) to promote and encourage the discovery, development, management, utilization and conservation of the mineral resources of Saskatchewan;

(b) to regulate the disposition of Crown mineral lands;

(c) to protect landowners' correlative rights (surface rights and mineral rights);

(d) to establish and maintain scientific libraries on the mineral resources of Saskatchewan; and

(e) to promote safety in mines and mining operations.

This Act gives the Minister of the Department of Mineral Resources the power to do "such things as he deems necessary to discover, develop, manage, utilize and conserve the mineral resources of Saskatchewan . . ." This includes such activities as geological surveys, test drilling, producing maps and reports, etc. Section 10 of the Act allows the Lieutenant-Governor in Council to make regulations for such activities as disposal of Crown mineral lands, sub-leasing of mineral land rights and surface rights required for mining purposes, depositing waste products on land or in water bodies, and requiring mine operators to provide information on the work conducted.

The Oil and Gas Conservation Act, R.S.S. 1978, c.O-2, regulates all operations for the production of oil and gas. The purpose of the Act is to prevent waste and to provide for the greatest possible ultimate recovery of oil and natural gas. In 1973 the government set up a Crown corporation under *The Saskatchewan Oil and Gas Corporation Act*, R.S.S. 1978, c.S-3 for the purposes of exploring petroleum and natural gas resources in the province and encouraging production and processing of these resources.

In addition to regulating exploitation of mineral resources, the legislation also provides for proper methods of operation and environmental protection. For example, regulations under *The Mineral Resources Act* forbid the disposal of industrial wastes into the physical environment and state that waste disposal must be carried out in a manner satisfactory to the Minister. Whenever liquid industrial wastes are discharged into water bodies by mines, the regulations also require mine operators to furnish the Department of Mineral Resources with information on water quality. *The Water Resources Management Act* and *The Department of the Environment Act* and regulations under these Acts, administered by the Department of the Environment, also regulate waste disposal. Air pollution is covered by *The Air Pollution Control Act* and *The Mineral Resources Act*.

The Oil and Gas Conservation Act provides for disposal of water, brine, sediment and other oil field wastes and prescribes certain methods of operation to be observed in order to protect life and property and prevent pollution.

2. Lands devoted to mineral production

Figures 2-2 and 2-3 illustrate locations of the various mines and producing oil and gas fields in Saskatchewan. Most mines and wells occupy only very small areas of land. The coal mines in the southeast, where the large scale stripping of surface layers is being carried out, are an exception.

The only area in the province which has been commercially strip mined for coal to date is Estevan in the southeast. Over 10,000 acres of land have been stripped in this area, and the present annual rate of stripping is about 500 acres per year.

Table 4-87

Mineral production

Period	Dollar Value
1886-1905	$ 1,147,196
1905-1930	25,926,871
1930-1952	334,535,775
1953	48,081,970
1954	68,216,009
1955	85,150,128
1956	122,744,698
1957	173,461,037
1958	209,940,966
1959	210,042,051
1960	212,093,225
1961	215,977,233
1962	237,653,502
1963	272,355,007
1964	292,373,974
1965	328,167,375
1966	349,303,729
1967	362,193,519
1968	357,173,719
1969	344,815,007
1970	392,507,660
1971	408,853,455
1972	409,619,706
1973	510,313,000
1974	790,330,255
1975*	826,536,000

*Estimated.

Source: Saskatchewan Department of Mineral Resources, *Inventory and Outlook of Saskatchewan's Mineral Resources*, September, 1976, p. 66.

The Mineral Land Branch of the Department of Mineral Resources is responsible for disposition of all minerals that belong to Saskatchewan. Under the Mineral Disposition Regulations covering uranium and base and precious metals, a total of 7,740,074 acres were under disposition as claims, claim blocks, permits or leases as of March 31, 1976. At the same time, 48,036 acres were under disposition under the Quarrying Regulations, 478,428 acres under the Coal Mining Regulations, 20,372 acres (for sodium sulphate) under the Alkali Mining Regulations and 890,460 acres (for potash) under the Sub-surface Mineral Regulations. Table 4-86 shows the mineral lands under exploration and development for the period 1971-1976.

3. Products and economic returns from minerals

On a per capita basis, Saskatchewan is the third largest mineral producer among the provinces. Table 4-87 shows the value of mineral production in Saskatchewan since the first extraction in 1886. Annual production of minerals showed a tenfold increase from 1953 to 1975. Details of production and value figures for individual minerals are outlined below.

(i) Coal

Over 70 million tons of lignite coal have already been mined in the Estevan area, mainly by stripping. Annual production at the present time is about four million tonnes per year. Of this coal, approximately three quarters is sold to the Saskatchewan Power Corporation for thermal generation of electrical power; the rest is sold elsewhere in Canada and in the U.S.

Table 4-86

Disposition of Crown mineral lands 1971 to 1976

Year	Under the Mineral Disposition Regulations 1961								Under the Quarrying Regulations, 1967				Under the Alkali Mining Regulations		Under The Coal Mining Regulations 1957				Under the Subsurface Mineral Regulations 1960			
	Claims		Claim blocks		Permits		Leases		Permits		Leases		Leases		Permits		Leases		Permits		Leases	
	No.	Acreage	No.	Acreage	No.	Acreage	No.	Acreage	No.	Acreage	No.	Acreage	No.	Acreage	No.	Acreage	No.	Acreage	No.	Acreage	No.	Acreage
1971	15,421	616,840	1,042	3,141,101	54	9,770,636	563	58,303	6	29,820	680	28,165	28	20,372	149	261,166	163	43,856	9	757,472	11	855,542
1972	5,250	210,000	630	1,743,441	25	4,336,819	534	54,405	5	24,280	747	32,654	28	20,372	415	707,902	331	118,384	7	624,107	10	816,276
1973	4,301	172,040	475	1,336,955	16	2,763,959	533	54,358	1	3,680	804	39,162	28	20,372	457	741,240	354	130,463	3	275,867	11	839,986
1974	5,531	221,240	492	1,590,203	11	2,012,363	529	53,157	10	11,424	854	41,199	28	20,372	205	293,296	608	257,894	3	275,867	12	871,297
1975	4,848	193,920	650	2,112,741	8	1,487,760	550	68,989	7	8,804	858	40,082	28	20,372	8	3,396	1,004	474,490	1	99,239	11	782,926
1976	3,864	154,560	879	4,023,940	20	3,479,461	567	82,113	4	8,101	660	39,935	28	20,372	—	—	1,005	478,428	—	—	12	890,460

Sources: Saskatchewan Department of Mineral Resources, *Annual Report*, for the fiscal year ended March 31, 1972, pp. 22-25.

Saskatchewan Department of Mineral Resources, *Annual Report*, for the fiscal year ended March 31, 1974, pp. 9-10.

Saskatchewan Department of Mineral Resources, *Annual Report*, for the fiscal year ended March 31, 1975, pp. 9-10.

Saskatchewan Department of Mineral Resources, *Annual Report*, for the fiscal year ended March 31, 1976, p. 14.

(ii) Uranium

Uranium is another of Saskatchewan's important mineral resources. Production is now occuring in the Beaverlodge Lake area near Uranium City and in the Rabbit Lake area near Wollaston Lake. A proposed mine at Cluff Lake, south of Lake Athabasca, has been approved; another potential mine is located at Key Lake. Since the Eldorado mine first went into operation near Uranium City in 1953, the market for uranium oxide has fluctuated. Sales peaked in the late 1950's and early 1960's, declining sharpy to 1972. Since then there has been a slow recovery. Because of the increased demand for uranium on the world market, it is expected that uranium oxide prices will increase in the near future, providing a much-needed incentive for exploration, and also an economic return for those mines now operating.

(iii) Oil

Saskatchewan produces three grades of crude oil — light, medium and heavy gravity. Light oils are the easiest to recover and refine, and hence the most desirable. Table 4-88 summarizes information on petroleum production in Saskatchewan.

(iv) Natural gas

Natural gas is usually associated with crude oil in Saskatchewan, but in some locations it is not. Use and sale of natural gas in the province is controlled by the Saskatchewan Power Corporation. Table 4-89 summarizes information on sales of gas by SPC and production in the province to and including 1975. The quantity of natural gas available from Saskatchewan sources is not sufficient to meet provincial demand; the deficit is made up from reserves in Alberta which are owned by SPC.

(v) Potash

Potassium oxide (K_2O), commonly known as potash, is an important fertilizer, and Saskatchewan has one of the world's most important accessible reserves. This mineral was deposited by evaporating seas between 300 and 400 million years ago. Because the deposits are too deep, they cannot be mined by the open pit process.

In 1977, about 6.1 million tonnes of potash were sold on the market at a value of almost 400 million dollars. Of the total volume produced, about 70 per cent went to the U.S.

Table 4-90 shows annual production of potash in Saskatchewan and its value in dollars from 1964 to 1977 inclusive.

(vi) Salt

Saskatchewan has been producing salt or sodium chloride (NaCl) on a commercial basis since the early 1930's. In 1977, about 247,539 tonnes of salt were sold on the market at a value of nearly four million dollars.

Table 4-88

Crude oil production and demand

Year	Production Millions of cubic metres Canada	Sask.	Canadian demand** Millions of cubic metres	Saskatchewan production as a per cent of Canadian Production	Demand
1960	30.12	8.25	43.75	27	19
1961	39.05	8.89	50.61	25	18
1962	38.81	10.24	53.04	27	19
1963	40.96	11.34	56.99	28	20
1964	43.66	12.94	59.97	30	22
1965	46.47	13.96	65.38	30	21
1966	50.96	14.82	63.36	29	21
1967	55.85	14.71	66.00	26	20
1968	60.32	14.59	70.24	24	19
1969	65.34	13.86	72.96	21	17
1970	73.32	14.23	76.72	20	17
1971	78.33	14.07	80.17	19	16
1972	89.35	13.77	83.69	15	15
1973	87.43	13.61	95.05	13	13
1974	97.65	11.73	—	13	—
1975	86.52*	9.38	—	11	—

* Estimated.

** Refinery crude runs + net product imports (Canadian Petroleum Association Yearbooks).

Source: Saskatchewan Department of Mineral Resources, *Inventory and Outlook of Saskatchewan's Mineral Resources*, September 1976, p. 42.

Table 4-89

Natural gas production and demand*

Year	Sales by SPC (demand)	Non-associated gas production in Saskatchewan	Associated gas from plants in Saskatchewan	Deficit — Imported from Alberta
1963	1,240	546	278	423
1964	1,371	636	312	423
1965	1,659	715	274	670
1966	1,831	898	247	686
1967	1,947	898	269	780
1968	2,302	1,117	248	938
1969	2,241	1,202	216	823
1970	2,264	1,257	220	787
1971	2,314	1,503	195	823
1972	2,454	1,495	176	783
1973	2,584	1,476	178	931
1974	2,575	1,426	144	1,005
1975	2,552	1,479	118	955

* Quantities in millions of cubic metres.

Source: Saskatchewan Department of Mineral Resources, *Inventory and Outlook of Saskatchewan's Mineral Resources*, September 1976, p. 47.

Table 4-90

Potash production

Year	Production (tonnes K_2O)	Value of production	Sales (tonnes K_2O)	Value of sales
1968	2,770,203	$ 68,156,910	not available	—
1969	3,363,749	79,089,440	not available	—
1970	3,188,270	116,000,000	not available	—
1971	3,572,938	145,966,358	3,605,918	$145,966,358
1972	3,927,618	154,821,382	3,709,362	146,231,416
1973	4,249,417	173,080,414	4,787,372	195,025,329
1974	5,495,770	—	5,731,337	312,544,384
1975	5,433,131*	—	4,638,437*	356,065,000*
1976	4,991,513	—	5,168,560	358,393,552
1977	6,089,670	—	5,693,692	395,832,534

* Estimated.

Sources: Saskatchewan Department of Mineral Resources, *Inventory and Outlook of Saskatchewan's Mineral Resources*, September 1976, p. 56.

Saskatchewan Department of Mineral Resources, *1975 Mineral Statistics Yearbook*, pp. 3-5.

Saskatchewan Department of Mineral Resources, *1976 Mineral Statistics Yearbook*, pp. 3-5.

Saskatchewan Department of Mineral Resources, *1977 Mineral Statistics Yearbook*, pp. 3-5.

(vii) Sodium Sulphate

Sodium sulphate (Na_2SO_4) is a salt commonly deposited by saline lakes on the prairies. Mining is performed by bulldozer or dragline, usually during the winter when the ground is frozen.

The eight plants operating in Saskatchewan produced about 371,038 tonnes of sodium sulphate in 1977, the value of which was about 19 million dollars.

(viii) Sand, gravel and quartz flux

Sand and gravel are mined from many small deposits in Saskatchewan. They were deposited by glaciers and are therefore near the surface, so that mining is by the open pit process. The pits are very small compared with the coal pits at Estevan. An estimated 10.4 million tonnes of sand and gravel were mined in 1975 at an estimated value of 9.8 million dollars.

Quartz flux is a pure silica sand mined near Flin Flon and used at the smelter there for the recovery of copper. In 1975 approximately 110,680 tonnes were mined, the value of which was about $152,000.

(ix) Cement

Local clays near Regina provide cement, which is processed in the city. Mining is by the open pit process, but the pits are small and localized. In 1975 approximately 217,700 tonnes of clay were mined.

Table 4-91

Production and value of base metals from Saskatchewan 1960 to 1977 (all quantities in kilograms)

Year	Copper	Zinc	Nickel	Lead	Cadmium	Selenium	Tellurium	Total
1960	28,834,993	38,739,099	—	—	116,346	33,122	2,487	
	$19,255,437	$11,401,580			$364,227	$511,147	$19,187	$13,551,578
1961	30,371,606	27,727,602	—	—	56,960	18,720	2,085	
	$19,545,019	$ 7,141,004			$200,216	$268,255	$22,291	$27,176,785
1962	29,045,224	28,031,664	—	—	58,161	25,521	2,260	
	$19,850,465	$ 7,477,708			$200,544	$323,524	$29,892	$27,902,133
1963	27,008,226	25,192,120	—	—	60,301	32,747	1,701	
	$18,756,028	$ 8,516,479			$319,056	$350,141	$24,382	$27,966,086
1964	18,544,775	25,797,926	—	—	55,671	20,334	1,461	
	$13,655,333	$ 8,059,144			$397,658	$217,421	$20,930	$22,350,486
1965	16,993,183	25,385,642	105,125	—	60,363	16,375	1,351	
	$14,086,297	$ 8,450,830	$194,680		$369,957	$175,085	$19,357	$23,296,206
1966	17,745,338	26,226,192	13,365	—	60,034	27,587	1,538	
	$17,565,676	$ 8,730,647	$ 25,252		$364,221	$294,967	$22,035	$27,002,798
1967	20,842,218	25,774,644	147,141	1,414,915	60,932	16,930	2,476	
	$21,858,046	$ 8,233,075	$306,225	$ 436,709	$376,129	$181,026	$35,484	$31,427,324
1968	20,031,487	26,672,341	130,910	2,415,525	43,475	18,227	1,880	
	$21,241,859	$ 8,181,451	$293,399	$ 715,723	$273,161	$194,892	$26,777	$30,927,262
1969	16,538,138	22,808,918	237,484	2,596,300	38,493	18,323	1,758	
	$18,751,559	$ 7,658,414	$507,120	$ 868,310	$298,718	$231,059	$25,685	$28,440,865
1970	17,665,802	19,806,068	—	—	42,505	19,462	1,279	
	$22,609,180	$ 6,955,819			$333,597	$368,992	$17,675	$30,285,263
1971	10,111,194	7,844,874	—	—	15,365	3,528	389	
	$11,769,842	$2,893,451			$65,714	$ 70,711	$ 5,193	$14,804,911
1972	11,381,727	15,081,579	—	—	36,894	6,270	373	
	$12,779,314	$ 6,340,953			$205,785	$123,172	$ 4,883	$19,454,107
1973	9,274,956	12,087,006	—	—	28,912	17,236	1,499	
	$15,683,725	$ 6,082,139			$220,319	$396,500	$ 5,305	$22,388,038
1974	7,598,396	5,902,129	—	—	14,708	16,888*		
	$12,892,363	$ 4,365,905	—	—	$123,637	$390,108*		$17,772,013
1975	7,555,112	3,538,470	—	—	1,812	3,236*		
	$ 9,748,857	$ 2,997,140			$ 10,944	$160,210*		$12,917,151
1976	10,368,839	7,866,007	—	—	15,446	10,313*		
	$14,550,322	$ 6,394,841			$ 84,077	$475,171*		$21,504,411
1977	6,910,242	4,794,250	—	—	8,245	4,479*		
	$ 9,828,899	$ 3,773,922	—	—	$ 48,261	$244,760*		$13,895,842

*Selenium + Tellurium combined (1974-1977)

Sources: Saskatchewan Department of Mineral Resources, *Inventory and Outlook of Saskatchewan's Mineral Resources*, September 1974, p. 34.

Saskatchewan Department of Mineral Resources, *1975 Mineral Statistics Yearbook*, pp. 3, 4.

Saskatchewan Department of Mineral Resources, *1977 Mineral Statistics Yearbook*, pp. 3, 5.

(x) Clays

Clays useful for the manufacture of bricks are common in southern Saskatchewan. Bricks are manufactured at Estevan and Claybank.

High quality clays are used for the manufacture of firebrick and stoneware at Claybank. In 1975 the value of clay products was nearly 2.6 million dollars.

(xi) Helium and nitrogen

Helium is a very light gas. As it is chemically inert, it is non-combustible and therefore safe for use in balloons. A helium well and plant near Swift Current began production in 1963 with an annual capacity of 340,000 cubic metres helium. In 1966, plans for tripling production by January, 1967 were announced. In 1973 the basic price of helium at the plant was $1.24 per cubic metre. As a result of high production costs, the helium plant stopped production in 1977.

The helium plant at Swift Current also produced nitrogen, as the two gases occur together. Liquid nitrogen was sold to space industries and to oil well drillers. Figures for sales of helium and nitrogen are not available.

(xii) Sulphur

Some of the oil from southwestern Saskatchewan contains a high percentage of sulphur, which must be removed before the oil can be used. This oil is now processed at a refinery in St. Paul, Minnesota, which is especially equipped to deal with "sour" crude oils. Also, the gas plant at Steelman produces some sulphur as a by-product. The total amount of sulphur produced from Saskatchewan sources in 1977 was about 1,383 tonnes, the value of which was approximately $34,771.

(xiii) Base metals

Copper and zinc ores are recovered from the Precambrian rocks in the Flin Flon area, and some small deposits of copper and nickel have been mined from other parts of the Precambrian Shield area in the province. Table 4-91 illustrates the amount and value of base metal production in Saskatchewan from 1960 to 1977 inclusive.

(xiv) Precious metals

Gold, silver, platinum and palladium have been mined at a few locations in northern Saskatchewan. Table 4-92 summarizes information regarding these metals.

Table 4-92

Production and value of precious metals from Saskatchewan 1960 to 1977 (all quantities in kilograms)

Year	Gold		Silver		Platinum		Palladium		Total Value
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	
1960	2,411.75	$2,878,111	33,110.15	$1,034,775					$3,912,886
1961	2,013.47	2,510,000	24,934.07	826,142					3,336,142
1962	1,878.62	2,470,332	21,684.21	887,980					3,358,312
1963	1,843.86	2,446,691	21,242.34	1,033,409					3,480,100
1964	1,313.91	1,743,484	16,879.32	830,648					2,574,132
1965	1,313.57	1,742,061	18,235.62	897,393	10.04	$21,780	16.13	$34,218	2,695,452
1966	1,214.14	1,609,387	17,164.89	844,098	1.05	2,283	1.99	4,225	2,459,993
1967	1,362.56	1,808,036	17,217.72	1,048,232	12.54	28,607	26.29	59,947	2,944,822
1968	1,279.34	1,695,819	19,797.41	1,609,601	10.01	25,592	19.63	50,123	3,381,135
1969	1,125.49	1,491,092	18,483.24	1,253,919	21.56	59,110	33.60	92,091	2,896,212
1970	1,277.04	1,641,142	13,972.78	910,113					2,551,255
1971	738.53	917,530	6,792.55	372,470					1,290,000
1972	868.46	1,758,599	10,936.99	642,020					2,400,691
1973	759.38	3,095,083	13,036.78	1,410,490					4,505,573
1974	436.01	2,937,772	6,406.89	1,106,858					4,044,630
1975	425.14	2,425,329	7,364.21	1,170,681					3,596,010
1976	506.50	2,140,641	9,507.26	1,435,980					3,576,621
1977	418.62	2,356,456	7,478.97	1,303,091					3,659,547

Sources: Saskatchewan Department of Mineral Resources, *Inventory and Outlook of Saskatchewan's Mineral Resources*, September 1976, p. 36.

Saskatchewan Department of Mineral Resources, *1975 Mineral Statistics Yearbook*, pp. 3, 4.

Saskatchewan Department of Mineral Resources, *1977 Mineral Statistics Yearbook*, pp. 3, 5.

Table 4-93

Employment figures for mineral industries in Saskatchewan

Year	Potash		Coal		Petroleum and gas		All mineral industries	
	No. of establishments	No. of workers	No. of establishments	No. of workers	No. of establishments	No. of workers	No. of establishments	No. of workers
1971	8	2,876	3	164	178	463	204	3,414
1972	8	1,829	3	166	191	452	214	3,344
1973	9	2,009	—	—	187	465	209	3,372
1974	9	2,519	—	—	151	414	175	3,952
1975	9	2,575	—	—	—	—	163	4,003
1976	9	2,484	—	—	128	324	—	—

Sources: Statistics Canada, *Coal Mines, Calendar Years 1974, 1975 and 1976*, Catalogue 26-206, Annual, Ottawa, November, 1976, October, 1977, and July, 1978.

Statistics Canada, *The Crude Petroleum and Natural Gas Industry 1973, 1974 and 1977*, Catalogue 26-213, Annual, Ottawa, December 1974, February, 1976, and January, 1979.

Statistics Canada, *Mineral Industries: Principal Statistics*, 1968 to 1975, Catalogue 26-204 Annual, Ottawa, p. 2.

Statistics Canada, *Potash Mines: Principal Statistics*, 1976, Catalogue 26-222, Annual, Ottawa, p. 4.

Table 4-94

Breakdown of Saskatchewan wage earners by type of mineral industry

Year and province	Metal mines No. employed	Non-metallic No. employed	Fuels No. employed	Stone, sand & gravel No. employed
1974				
Saskatchewan	754	3,639	885	13
Canada	50,558	12,833	11,275	4,929
1975				
Saskatchewan	931	3,763	779	13
Canada	50,319	10,314	11,371	5,083

Sources: Statistics Canada, *Mineral Industries: Principal Statistics*, 1974 to 1976, Catalogue 26-204 Annual, Ottawa, pp. 1, 2.

Statistics Canada, *General Review of the Mineral Industries: Mines, Quarries and Oil Wells 1975*, Catalogue 26-201, Ottawa, January 1978, p. 45.

4. People employed in mining

In Canada during 1975 approximately 76,000 people were employed in the mineral industry. Only 5.2 per cent or 4,003 of these were employed in Saskatchewan. In 1974 the employment figure for Saskatchewan was 3,952 or 4.9 per cent of the Canadian total.

In Saskatchewan in 1975, the non-metallic industries such as potash, coal and petroleum and gas employed 4,555 people. Metallic mines employed 931 people in 1975. Tables 4-93 and 4-94 present additional information on employment in the mineral industries of Saskatchewan.

See following page

** The material for this section was derived primarily from:

Canada Department of Indian Affairs and Northern Development, *Schedule of Indian Reserves and Settlements* (Ottawa: Information Canada, 1972), Part 1, pp. 206-225 and Part II, pp. 39-43.

Canada Department of Indian Affairs and Northern Development, *The Canadian Indian — Statistics* (Ottawa: Information Canada, 1973), pp. 10 and 39-42.

Jean C. Downing, *Preliminary Report — Population and Land Use — South Saskatchewan River Development Region* (Regina: South Saskatchewan River Development Commission, 1960).

P. C. Rump and R. E. Watson, *Land Use and Land Ownership in the Qu'Appelle River Valley*, Saskatchewan Water Resources Commission Report for the Qu'Appelle Basin Study Board, July, 1971.

Saskatchewan Department of Municipal Affairs, *Annual Report*, for the fiscal year 1973-74 ended March 31, 1974.

Saskatchewan Department of Municipal Affairs, *A Planning Study for the Town of Melfort*, Community Planning Branch, December, 1974.

Saskatchewan Department of Public Health, *Saskatchewan Population Statistics*, Research and Planning Branch, May, 1973.

Saskatchewan Department of the Environment, *Saskatchewan Environmental Legislation*, Policy, Planning and Research Branch, January, 1976, pp. 119-123 and 166-167.

J. Settlements[10]

1. Legislation

The legislative Acts which directly affect the use of land in settlements are:

The Urban Municipality Act, R.S.S. 1978, c.U-10

The Rural Municipality Act, R.S.S., 1978, c.R-26

The Planning and Development Act, R.S.S., 1978, c.P-13

The Northern Administration Act, R.S.S., 1978, c.N-5.

In the southern half of the province, the Departments of Rural Affairs and Urban Affairs administer *The Urban Municipality Act, The Rural Municipality Act* and *The Planning and Development Act*. Many of the administrative responsibilities have been delegated to local governments or special commissions as set out in these Acts.

There are 299 rural municipalities. Each of these has a municipal council which administers *The Rural Municipality Act* and any relevant bylaws of the municipality. Urban municipalities are set up in incorporated settlements with an elected council which administers the area under *The Urban Municipality Act*. One rural municipality may surround several urban municipalities, and one urban municipality may be adjacent to several rural municipalities. However, jurisdiction does not overlap. Under special circumstances, several municipalities, or parts thereof, may be declared a special planning area under *The Planning and Development Act*.

In the northern half of the province, settlement lands are administered under *The Northern Administration Act* by the Department of Northern Saskatchewan. Incorporated settlements are administered by a local council in the same manner as in the south. The remainder of the area has been divided into five districts; each elects a member to form the Northern Municipal Council. At the present time, eight settlements have a Local Community Authority, which functions much like a village council in the south. Other settlements have established Local Advisory Committees, which advise the Northern Municipal Council regarding issues in their communities. A number of northern settlements are considering incorporation.

The Planning and Development Act, R.S.S., 1978, c.P-13, is the legislative authority for development control and land use planning on public and private lands in urban and rural areas within Saskatchewan.

The Act enables a council to appoint a municipal planning commission to advise and assist the local council on all matters pertaining to planning and orderly development of the municipality. The commission can investigate land use, population, transportation, utilities, services, municipal finances and any other matter within or outside the municipality that, in the opinion of the commission, is related to the physical, social or economic circumstances of the municipality and affects the development of the municipality.

Under the Act a council may (or the Minister may direct a council to) prepare a municipal development plan. The purpose of such a plan is to give direction to the future physical, social and economic development and improvement of the municipality. Similarly, the Act allows for establishment of zoning bylaws to control use of land and to provide for the amenity of the municipality and for the health, safety, and general welfare of the municipality's residents. Such a bylaw may regulate or prohibit use of land for any purpose. Where a zoning bylaw is in effect, no development can be undertaken or use commenced unless a development permit is obtained. A development permit is not valid unless it conforms with the zoning bylaw.

Under this Act two or more municipalities may establish a planning district. The Minister may also direct municipalities to form a planning district. Within a planning district, a district planning commission may prepare a district development plan or a district zoning bylaw.

All new subdivisions of land must comply with *The Planning and Development Act* and its regulations. The Minsiter may by order declare that for subdivisions:

(a) the Director of Community Planning shall be an approving authority;

(b) a council shall be an approving authority within the area under its jurisdiction.

The Minister may declare a municipality, several municipalities, or parts thereof a special planning area, if in his opinion the actual or possible development is of more than local interest and affects the interests of the public. Possible reasons for such a declaration include:

(a) orderly development of parks and recreation sites;

(b) protection of dams, reservoirs or public works;

(c) protection and conservation of natural resources such as lakes, rivers, forests, minerals or agricultural lands against loss, injury, damage or destruction through uncontrolled urbanization and the growth of urban uses;

(d) general access to and enjoyment of health or recreation resorts;

(e) the preservation of the landscape and natural beauty of an area;

(f) the preservation of historic sites;

(g) the creation and preservation of wildlife sanctuaries; and

(h) new towns.

The "special planning area" in the Qu'Appelle Valley was initiated to achieve planning and development control. Six special planning areas have been formed for the valley, each with its own planning commission. The planning commission members represent local government, the provincial government and special interest groups. The commissions, together with the Minister of Rural Affairs, are responsible for deciding on land use change proposals and for overseeing the development of future land use plans.

2. Cities, towns, villages, Indian reserves and resorts

Saskatchewan has long been identified as an agricultural province. However, many of the changing services required for effective agricultural production are best provided in the various urban centres. Because of this relocation of services, the rural population declined from 84 per cent of the total population in 1901 to 45 per cent in 1976. Additional information concerning urban and rural populations of Saskatchewan for 1966, 1971 and 1976 is given in Table 4-95.

Table 4-95

Percentage distribution of urban and rural populations in Saskatchewan 1966, 1971 and 1976

Area	1966		1971		1976	
	Population	Per cent	Population	Per cent	Population	Per cent
All areas	955,344	100.0	926,242	100.0	921,323	100.0
Urban	464,979	48.7	485,630	52.4	506,597	54.9
Cities	373,153	39.1	395,543	42.7	413,885	44.9
Towns over 1000	91,826	9.6	90,087	9.7	92,712	10.0
Rural	490,365	51.3	440,612	47.6	414,726	45.1
Towns under 1000	46,338	4.8	50,659	5.5	51,553	5.6
Villages	83,637	8.7	71,364	7.7	69,440	7.5
Rural municipalities	309,302	32.4	271,854	29.4	246,658	26.8
Local improvement districts	15,462	1.6	11,575	1.2	8,344	0.9
Indian reserves	23,496	2.5	23,811	2.6	25,296	2.8
Other areas*	12,130	1.3	11,349	1.2	13,435	1.5

* Includes Uranium City and District, Prince Albert National Park, unorganized areas, and Saskatchewan Hospital areas in 1966 and 1971.

Sources: Saskatchewan Department of Public Health, *Saskatchewan Population Statistics*, Research and Planning Branch, May 1973, p. 4.
Saskatchewan Bureau of Statistics, *Saskatchewan Economic Review No. 31*, 1977, pp. 36-40.

Four cities in Saskatchewan have populations of over 15,000 and seven have populations of less than 15,000. The province's two largest cities, Regina and Saskatoon, had populations of 149,593 and 133,750 respectively in 1976. Forty-eight towns have populations over 1,000 and 81 have populations of less than 1,000. There are 355 villages and hamlets in Saskatchewan, of which 14 are summer resort villages.

In 1975, the total area incorporated into cities was 109,857 acres. Saskatoon and Regina covered areas of 26,757 and 23,150 acres respectively. In the same year Saskatchewan towns occupied 107,938 acres of land and Saskatchewan villages occupied 81,061 acres. Thus, urban areas occupy about 0.18 per cent of Saskatchewan's land. The names, populations and areas of Saskatchewan's cities, towns and villages are shown in Table 4-96 and their locations are displayed on Figures 4-23, 4-24 and 4-25.

The greatest concentration of Indian reserves in Saskatchewan is in the central portion of the province (from Saskatoon north to La Loche) and in the southeastern portion of the province (north and east of Regina). The locations of Saskatchewan Indian reserves are shown on Figure 4-26.

There are 68 Indian bands distributed on 141 reserves. The reserves cover approximately 1,451,440 acres of land. Approximately 25,296 native people live on designated reserve areas.

3. Land use in settlements

It is not possible to describe the land use in all of the communities of Saskatchewan. Therefore, land use in one city, one town and one village will be described for illustrative purposes. The three communities selected are Regina, Melfort and Elbow.

(a) Land use in Regina

Figure 4-27 shows urban land use in the City of Regina. Except for two ribbons of commercial development on the north and south ends of Albert Street, commercial land use is primarily concentrated in the city centre. It represents 17.4 per cent of the total land use.

Industrial land uses represent 8.4 per cent of land use in Regina. Industrial areas are located along the railroad at the city centre and extend northward between Albert Street and Park Street to the CNR line at First Avenue. Further industrial development exists east of Winnipeg Street and north of First Avenue where the oil refineries are located. There is also a pocket of industrial land use west of Pasqua Street along the CNR line on the north side of the city.

There are small areas of institutional land use throughout the city, but the major concentration occurs along Wascana Creek and around Wascana Lake. The Wascana Centre Authority encompasses approximately 330 acres along Wascana Creek and around Wascana Lake east of Albert Street. Additional park space, golf course grounds and the RCMP occupy the bulk of the Wascana Creek area west of Albert Street.

Residential land uses, which are distributed throughout the city, constitute the major land use within the city. Residential areas occupy about 21 per cent of the total developed land area.

(b) Land use in Melfort

The Town of Melfort encompasses a wide variety of land uses. These are shown on Figure 4-28 and listed in Table 4-97.

Table 4-96

Populations and areas of cities, town and villages in Saskatchewan [1]

Location	Population	Acres
Cities		
(Under 15.000)		
Estevan	8.847	4.150
Lloydminster	4.493	5.457
Melville	5.149	3.743
North Battleford	13.158	7.654
Swift Current	14.264	3.850
Weyburn	8.892	3.840
Yorkton	14.119	4.280
(15.000 and over)		
Moose Jaw	32.581	11.040
Prince Albert	28.631	15.936
Regina	49.593	23.150
Saskatoon	33.750	26.757
Towns		
(2.000 and over)		
Assiniboia	2.738	832
Battleford	2.569	5.530
Biggar	2.491	3.840
Canora	2.689	1.770
Esterhazy	2.894	1.140
Hudson Bay	2.280	4.286
Humboldt	4.265	2.930
Kamsack	2.726	1.643
Kindersley	3.523	2.720
Maple Creek	2.330	1.028
Meadow Lake	3.662	1.576
Melfort	5.141	1.781
Moosomin	2.449	1.400
Nipawin	4.317	1.542
Rosetown	2.551	2.560
Shaunavon	2.183	640
Tisdale	3.036	992
Unity	2.244	2.402
Towns		
(1.000 to 1.999)		
Carlyle	1.057	640
Carnduff	1.071	404
Carrot River	1.020	300
Creighton	1.746	139
Davidson	1.092	573
Eston	1.354	425
Foam Lake	1.387	1.500
Fort Qu'Appelle	1.764	1.270
Gravelbourg	1.326	5.315
Grenfell	1.363	718
Gull Lake	1.053	560
Indian Head	1.720	717
Kelvington	1.053	495
Kerrobert	1.100	1.800
Langenburg	1.197	820
Lanigan	1.646	1.982
Leader	1.160	320
Lumsden	1.116	800
Outlook	1.687	1.855
Oxbow	1.221	640
Preeceville	1.170	620
Radville	1.008	165
Rosthern	1.504	699
Shellbrook	1.098	327
Wadena	1.377	647
Wakaw	1.031	677
Warman	1.117	420
Watrous	1.520	2.640
Whitewood	1.072	720
Wilkie	1.604	2.240
(Under 1.000)		
Alameda	319	640
Allan	720	108
Arborfield	400	186
Arcola	547	640
Asquith	416	320
Balcarres	729	320
Balgonie	715	640
Bengough	603	256
Bienfait	807	640
Big River	827	396
Birch Hills	752	320
Blaine Lake	631	220
Brendenbury	441	1.200
Broadview	861	480
Bruno	762	310
Cabri	631	330
Central Butte	518	608
Churchbridge	928	680
Craik	543	640
Cudworth	907	322
Cupar	611	167
Cut Knife	530	364
Delisle	783	566
Duck Lake	683	590
Eastend	771	672
Eatonia	553	320
Elrose	614	640
Fleming	164	620
Francis	150	160
Govan	323	320
Hanley	446	640
Herbert	986	485
Imperial	456	330
Ituna	910	400
Kinistino	763	184
Kipling	949	320
Kyle	499	559
Lafleche	639	331
Lampman	720	480
Langham	729	982
Lemburg	417	640
Leroy	436	211
Luseland	682	320
Macklin	873	640
Maidstone	747	252
Martensville	960	480
Midale	572	299
Milestone	511	166
Morse	435	402
Mossbank	444	347
Naicam	739	252
Nokomis	535	640
Norquay	520	333
Ogema	432	329
Ponteix	760	573
Porcupine Plain	935	312
Qu'Appelle	551	538
Radisson	432	330
Raymore	562	483
Redvers	843	640
Rocanville	872	375
Rockglen	508	238
Rose Valley	534	222
Rouleau	380	380
Saltcoats	488	320
Scott	209	1.180
Sintaluta	213	432
Spiritwood	841	441
Under 1.000 cont'd.)		
Star City	539	260
Stoughton	705	372
Strasbourg	812	1.440
Sturgis	705	110
St Walburg	718	292
Vonda	311	640
Waldheim	647	366
Wapella	453	640
Watson	940	720
Willow Bunch	417	200
Wolseley	883	1.440
Yellow Grass	461	640
Zealandia	150	194
Villages		
Abbey	259	160
Aberdeen	373	320
Abernethy	299	244
Adanac	29	319
Admiral	66	480
Alida	163	80
Alsask	734	434
Alvena	114	90
Aneroid	153	160
Antler	110	160
Archerwill	272	200
Arelee	68	30
Arran	110	160
Atwater	62	320
Avonlea	415	217
Aylesbury	80	320
Aylsham	153	100
Bangor	69	148
Beatty	97	177
Beechy	344	94
Belle Plaine	58	320
Benson	82	70
Bethune	317	202
Birsay	109	178
Bjorkdale	248	100
Bladworth	112	114
Borden	195	161
Bounty	44	416
Bracken	60	179
Bradwell	123	116
Briercrest	103	160
Brock	183	160
Broderick	135	165
Brownlee	92	640
Buchanan	434	259
Bulyea	88	332
Burstall	548	202
Cadillac	203	247
Calder	158	160
Cando	144	160
Canwood	306	614
Carievale	245	169
Carmichael	13	160
Carragana	106	101
Ceylon	259	147
Chamberlain	133	160
Chaplin	382	255
Choiceland	535	243
Climax	277	225
Coderre	115	167
Codette	214	83
Coleville	398	250
Colgate	63	155
(Villages cont'd.)		
Colonsay	542	640
Conquest	265	248
Consul	160	160
Coronach	386	252
Craven	185	250
Creelman	178	320
Dafoe	37	180
Dalmeny	602	227
Debden	381	300
Denholm	81	65
Denzil	230	160
Dilke	104	320
Dinsmore	398	305
Disley	46	160
Dodsland	312	598
Dollard	71	140
Domremy	188	160
Drake	251	160
Drinkwater	108	640
Dubuc	142	160
Duff	87	88
Dunblane	63	—
Dundurn	409	136
Duval	132	170
Dysart	236	320
Earl Grey	242	320
Ebenezer	155	127
Edam	348	230
Edenwold	134	177
Elbow	286	640
Elfros	213	640
Elstow	176	160
Endeavour	220	180
Englefeld	258	160
Ernfold	86	320
Eyebrow	198	640
Evesham	53	160
Fairlight	84	640
Fenwood	90	420
Ferland	73	40
Fife Lake	83	72
Fillmore	350	333
Findlater	85	272
Flaxcombe	100	200
Forget	74	320
Fosston	83	128
Fox Valley	429	125
Frobisher	187	320
Frontier	385	155
Gainsborough	311	160
Gerald	139	153
Girvin	80	160
Gladmar	74	30
Glaslyn	383	230
Glenavon	295	322
Glen Ewen	143	640
Glenside	97	156
Glentworth	88	73
Glidden	57	160
Golden Prairie	100	86
Goodeve	134	640
Goodsoil	217	150
Goodwater	61	120
Grayson	260	341
Guernsey	222	160
Hafford	515	132
Hague	530	159
Halbrite	132	240

continued

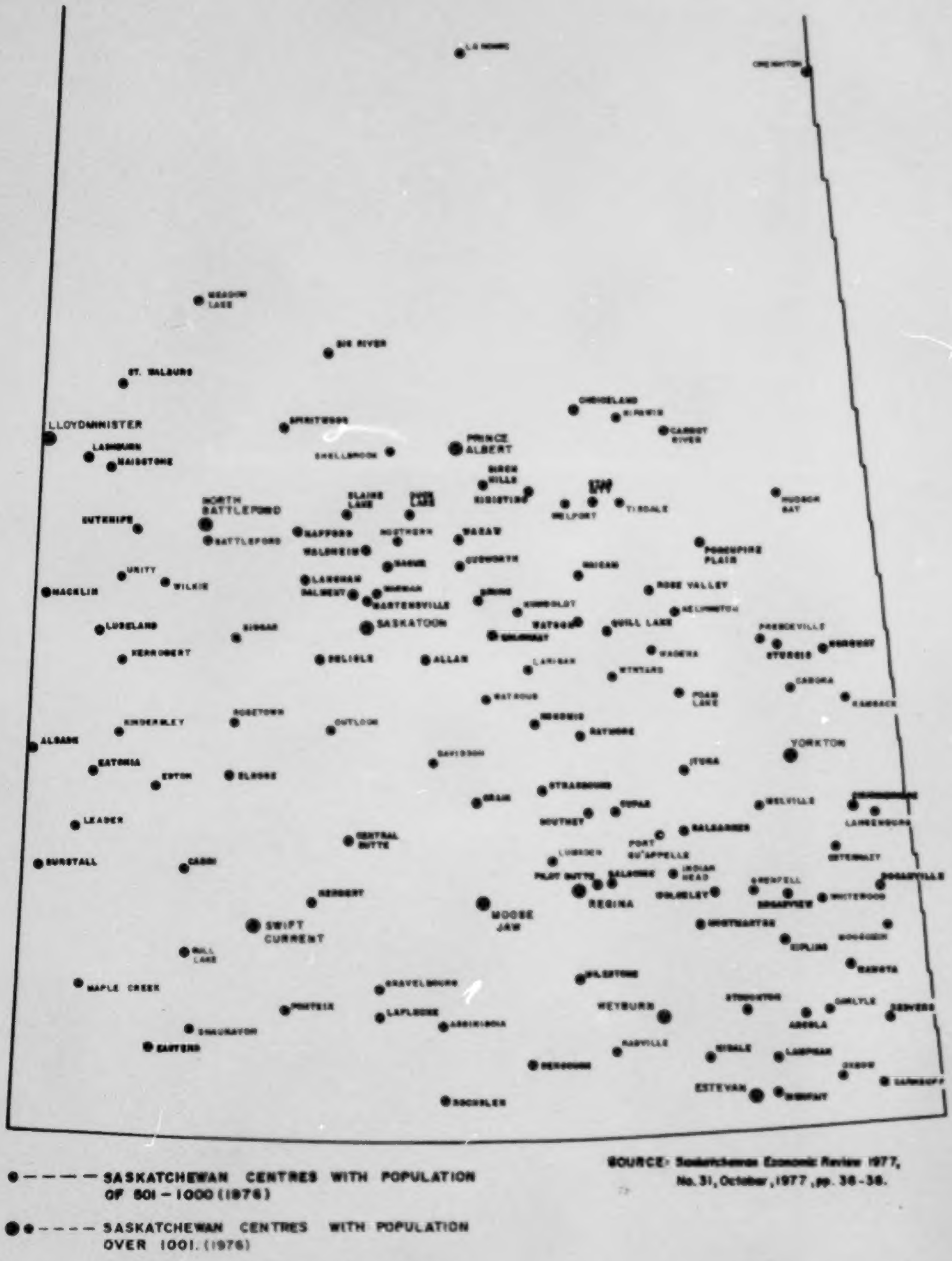
Table 4-96 (continued)

Populations and areas of cities, town and villages in Saskatchewan

Location	Population	Acres
(Villages cont'd.)		
Handel	69	640
Hardy	36	160
Harris	233	215
Hawarden	133	320
Hazenmore	128	160
Hazlet	120	134
Hepburn	352	300
Herschel	108	320
Heward	60	230
Hodgeville	332	175
Holdfast	312	320
Hubbard	90	238
Hyas	190	180
Insinger	56	240
Invermay	397	259
Jansen	209	260
Jedburgh	47	44
Keeler	44	200
Kelfield	20	240
Kelliher	411	640
Kenaston	352	194
Kendal	70	160
Kennedy	241	363
Khedive	76	160
Killaly	137	640
Kincaid	245	210
Kinley	65	320
Kisbey	252	640
Krydor	113	92
Laird	201	260
Lake Alma	116	140
Lake Lenore	385	241
Lancer	171	51
Landis	285	180
Lang	189	160
La Ronge	1,714	2,500
Lashburn	517	640
Lawson	26	160
Leask	446	160
Lebret	268	305
Leipzig	44	321
Leoville	404	145
Leross	91	320
Leslie	71	60
Lestock	414	149
Liberty	127	260
Limerick	166	160
Lintlaw	225	330
Lipton	353	160
Lockwood	45	194
Loon Lake	365	184
Loreburn	224	158
Love	125	114
Loverna	56	160
Lucky Lake	340	100
Macoun	163	290
MacNutt	141	175
Macrorie	100	170
Madison	42	82
Major	150	640
Makwa	107	200
Mankota	406	480
Manor	348	520
Mantario	34	160
Marcelin	273	210
Marengo	120	170
Margo	178	133
Markinch	88	156
(Villages cont'd.)		
Marquis	119	161
Marsden	211	132
Marshall	326	185
Maryfield	408	640
Maymont	172	160
Mazenod	70	167
McLean	184	360
McTaggart	77	151
Meacham	184	320
Meath Park	298	160
Medstead	197	199
Mendham	118	123
Meota	248	377
Mervin	174	140
Meyronne	98	104
Middle Lake	270	258
Milden	234	112
Minton	159	102
Mistatim	139	185
Montmartre	534	380
Mortlach	278	710
Muenster	333	320
Neilburg	369	168
Netherhill	83	320
Neudorf	394	435
Neville	129	184
North Portal	157	640
Odessa	203	186
Osage	55	160
Osler	225	132
Paddockwood	179	160
Palmer	56	160
Pangman	208	160
Paradise Hill	395	220
Parkside	100	160
Paynton	186	178
Pelly	354	229
Pennant	216	160
Pense	356	250
Penzance	74	160
Perdue	393	415
Piapot	123	148
Pierceland	358	171
Pilger	130	107
Pilot Butte	585	230
Plato	48	320
Plenty	193	160
Plunkett	139	112
Prelate	337	160
Primate	56	260
Prud'Homme	239	134
Punnichy	400	160
Quill Lake	534	320
Quinton	189	214
Rabbit Lake	166	205
Rama	163	160
Regina Beach	488	644
Rhein	284	240
Richard	21	149
Richmound	174	80
Ridgedale	147	160
Riverhurst	182	210
Robsart	44	320
Roche Percee	129	160
Rockhaven	47	240
Rush Lake	121	195
Ruddell	25	123
Ruthilda	46	160
(Villages cont'd.)		
St. Benedict	164	142
St. Brieux	362	191
St. Gregor	144	185
St. Louis	394	174
St. Victor	81	54
Salvador	52	480
Sceptre	204	192
Sedley	289	320
Semans	343	200
Senlac	107	160
Shackleton	38	160
Shamrock	78	200
Sheho	311	88
Shell Lake	217	188
Silton	58	240
Simpson	223	362
Smeaton	275	126
Smiley	111	160
Southey	604	172
Sovereign	68	217
Spalding	375	240
Speers	135	160
Springside	474	160
Spring Valley	44	160
Springwater	79	160
Spruce Lake	94	160
Spy Hill	351	252
Stenen	182	112
Stewart Valley	126	192
Stockholm	329	349
Stornoway	32	160
Storthoaks	152	62
Strongfield	101	160
Success	82	155
Tantallon	186	186
Tessier	54	240
Theodore	463	342
Togo	197	320
Tompkins	274	640
Torquay	344	320
Tramping Lake	200	332
Tribune	92	360
Tugaske	179	160
Turtleford	442	160
Tuxford	116	160
Val Marie	253	103
Valparaiso	58	160
Vanguard	286	470
Vanscoy	276	160
Vawn	97	160
Veregin	140	360
Vibank	305	170
Viceroy	88	260
Viscount	424	340
Waldeck	196	240
Waldron	63	227
Waseca	84	99
Wawota	619	—
Webb	84	255
Weekes	166	81
Weirdale	160	240
Weldon	272	268
Welwyn	180	160
West Bend	25	22
White City	340	331
White Fox	380	200
Wilcox	175	320
Willowbrook	72	120
(Villages cont'd.)		
Windthorst	215	320
Wiseton	201	165
Wishart	238	149
Wood Mountain	65	129
Woodrow	85	160
Wroxton	81	160
Yarbo	139	240
Yellow Creek	166	160
Young	495	640
Zelma	51	180
Zenon Park	313	45
Summer Resort Villages		
B-Say-Tah	92	128
Buena Vista	60	424
Etters Beach	5	12
Grandview Beach	—	67
Kannata Valley	46	52
Katepwa Beach	34	168
Lumsden Beach	1	36
Manitou Beach	136	84
Metinota	5	140
Sandy Beach	5	25
Sask. Beach	36	363
Tobin Lake	9	—
Wakaw Lake	2	55

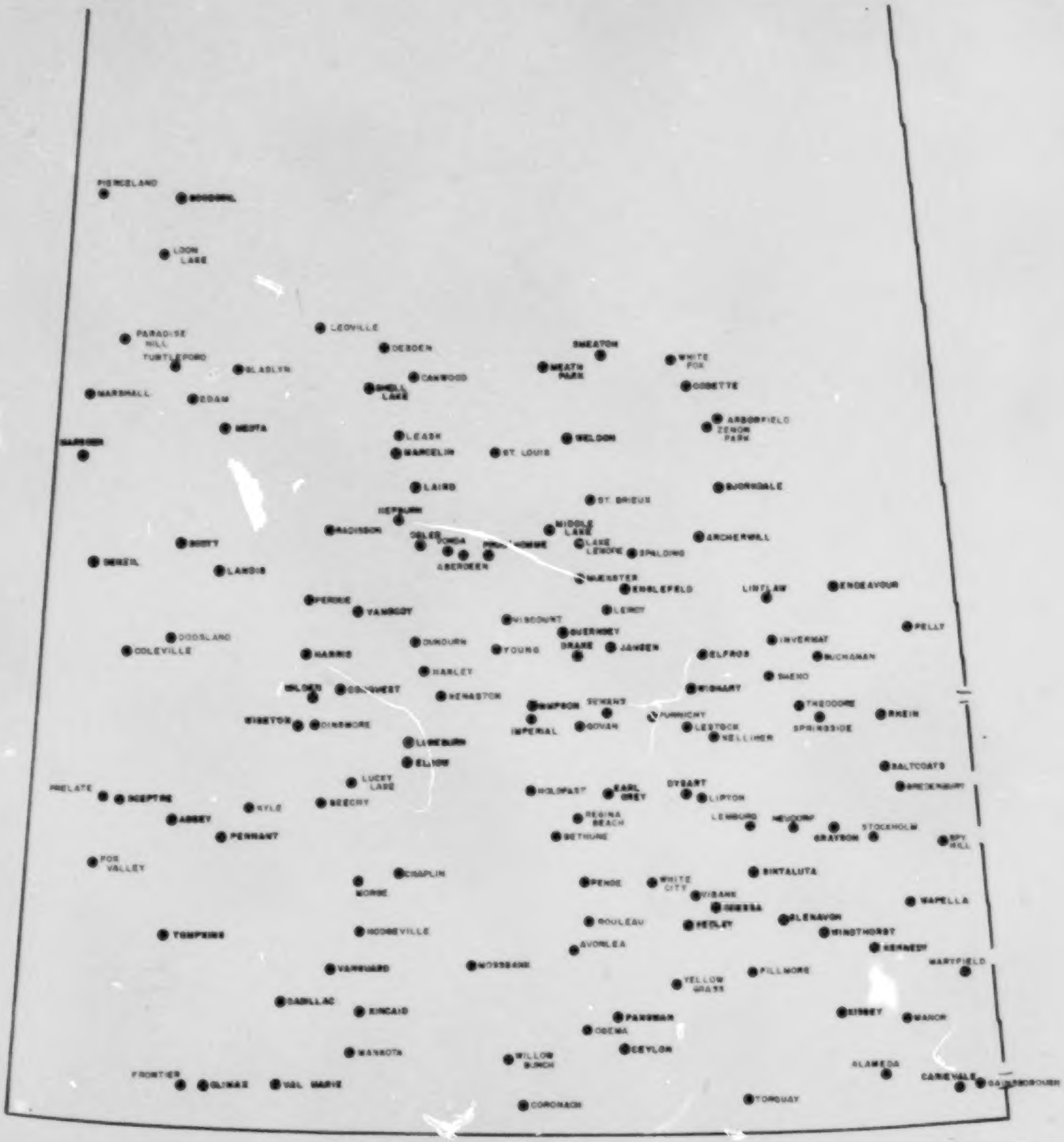
[1] Population figures are for 1976, area figures are for 1975

Sources: Saskatchewan Department of Municipal Affairs, *Annual Report*, for the fiscal year 1975-76 ending March 31, 1976, pp. 74, 84-87 and 112-119
Saskatchewan Bureau of Statistics, *Saskatchewan Economic Review, No. 31*, 1977, pp. 36-38


LA RONGE
CREIGHTON
MEADOW LAKE
BIG RIVER
ST. WALBURG
LLOYDMINSTER
LASHBURN
MAIDSTONE
SPIRITWOOD
SHELLBROOK
PRINCE ALBERT
CHOICELAND
NIPAWIN
CARROT RIVER
BIRCH HILLS
KINISTINO
MELFORT
STAR CITY
TISDALE
HUDSON BAY
NORTH BATTLEFORD
BATTLEFORD
CUT KNIFE
BLAINE LAKE
DUCK LAKE
HAFFORD
ROSTHERN
WAKAW
WALDHEIM
HAGUE
CUDWORTH
PORCUPINE PLAIN
NAICAM
UNITY
WILKIE
MACKLIN
LANGHAM
DALMENY
WARMAN
MARTENSVILLE
BRUNO
HUMBOLDT
ROSE VALLEY
KELVINGTON
WATSON
QUILL LAKE
PREECEVILLE
STURGIS
NORQUAY
LUSELAND
BIGGAR
SASKATOON
KERROBERT
DELISLE
ALLAN
LANIGAN
WADENA
WYNYARD
CANORA
KAMSACK
FOAM LAKE
WATROUS
NOKOMIS
RAYMORE
ROSETOWN
OUTLOOK
KINDERSLEY
ALSASK
YORKTON
DAVIDSON
ITUNA
EATONIA
ESTON
ELROSE
STRASBOURG
CRAIK
CUPAR
SOUTHEY
MELVILLE
CHURCHBRIDGE
LANGENBURG
LEADER
BALCARRES
FORT QU'APPELLE
CENTRAL BUTTE
LUMSDEN
ESTERHAZY
BURSTALL
CABRI
PILOT BUTTE
BALGONIE
INDIAN HEAD
GRENFELL
ROCANVILLE
REGINA
WOLSELEY
BROADVIEW
WHITEWOOD
HERBERT
MOOSE JAW
SWIFT CURRENT
MONTMARTRE
KIPLING
MOOSOMIN
GULL LAKE
WAWOTA
MILESTONE
MAPLE CREEK
GRAVELBOURG
STOUGHTON
CARLYLE
REDVERS
PONTEIX
LAFLECHE
WEYBURN
ARCOLA
ASSINIBOIA
SHAUNAVON
EASTEND
RADVILLE
MIDALE
LAMPMAN
BENGOUGH
OXBOW
CARNDUFF
ESTEVAN
BIENFAIT
CORONACH
● – – – – SASKATCHEWAN CENTRES WITH POPULATION OF 501 – 1000 (1976)
● – – – – SASKATCHEWAN CENTRES WITH POPULATION OVER 1001. (1976)

SOURCE: *Saskatchewan Economic Review 1977*, No. 31, October, 1977, pp. 36-38.

SASKATCHEWAN DEPARTMENT OF THE ENVIRONMENT POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN SASKATCHEWAN CENTRES WITH POPULATIONS OF OVER 500	FIGURE 4-23

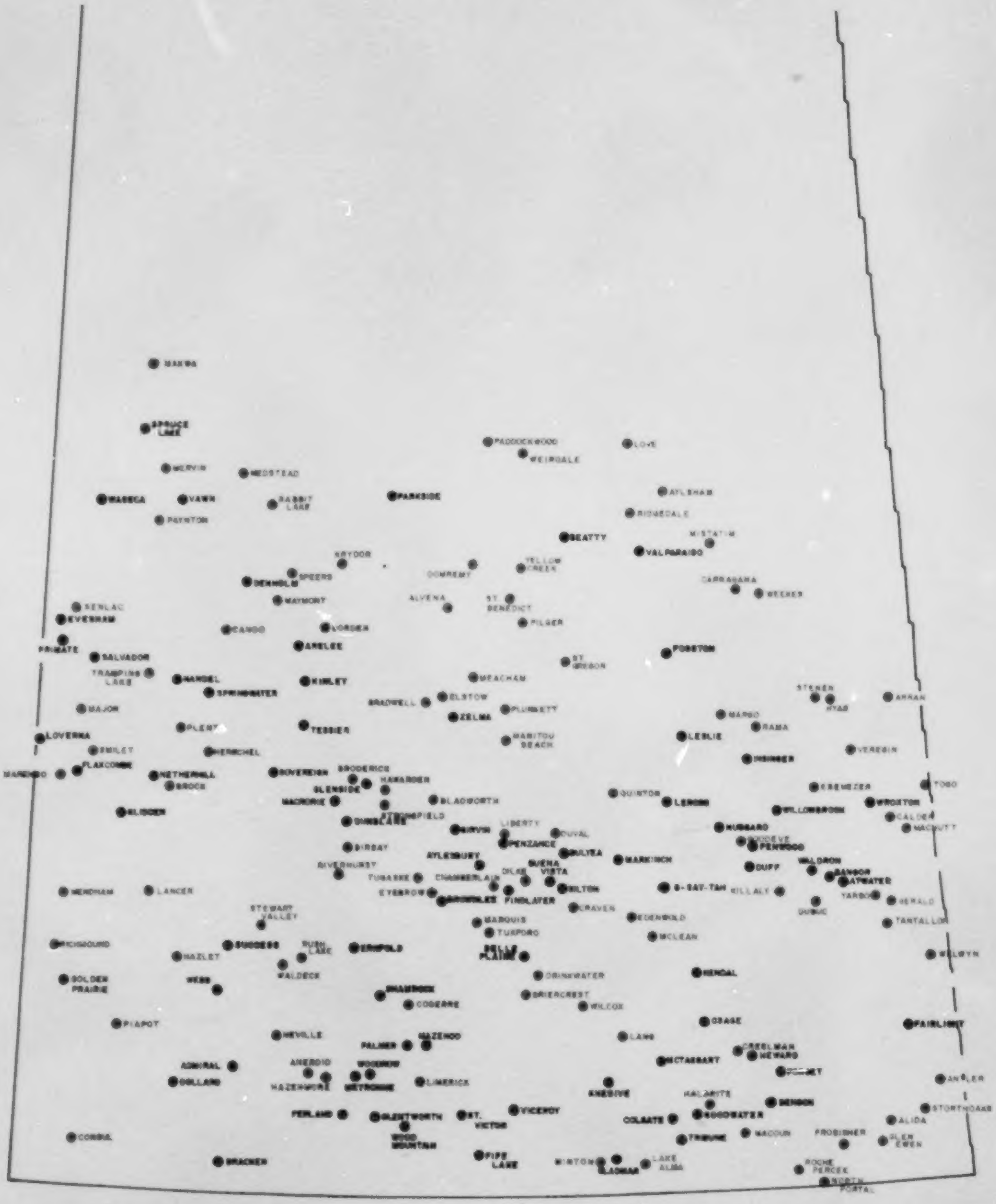

PIERCELAND
GOODSOIL
LOON LAKE
LEOVILLE
PARADISE HILL
TURTLEFORD
GLASLYN
DEBDEN
SMEATON
WHITE FOX
MEATH PARK
CANWOOD
SHELL LAKE
CODETTE
MARSHALL
EDAM
MEOTA
ARBORFIELD
ZENON PARK
MARSDEN
LEASK
MARCELIN
ST. LOUIS
WELDON
LAIRD
BJORKDALE
ST. BRIEUX
HEPBURN
RADISSON
MIDDLE LAKE
OSLER
VONDA
PRUD'HOMME
ABERDEEN
LAKE LENORE
SPALDING
ARCHERWILL
SCOTT
DENZIL
LANDIS
MUENSTER
ENGLEFELD
LINTLAW
ENDEAVOUR
PERDUE
VANSCOY
LEROY
VISCOUNT
GUERNSEY
PELLY
DODSLAND
COLEVILLE
DUNDURN
YOUNG
DRAKE
JANSEN
INVERMAY
HARRIS
ELFROS
BUCHANAN
HANLEY
SHEHO
MILDEN
CONQUEST
KENASTON
WISHART
SIMPSON
SEMANS
THEODORE
WISETON
DINSMORE
IMPERIAL
GOVAN
PUNNICHY
LESTOCK
SPRINGSIDE
RHEIN
KELLIHER
LOREBURN
ELBOW
SALTCOATS
LUCKY LAKE
BREDENBURY
PRELATE
SCEPTRE
KYLE
BEECHY
HOLDFAST
EARL GREY
DYSART
LIPTON
ABBEY
REGINA BEACH
LEMBURG
NEUDORF
GRAYSON
STOCKHOLM
PENNANT
BETHUNE
SPY HILL
FOX VALLEY
CHAPLIN
SINTALUTA
MORSE
PENSE
WHITE CITY
VIBANK
WAPELLA
ODESSA
ROULEAU
SEDLEY
GLENAVON
TOMPKINS
HODGEVILLE
WINDTHORST
AVONLEA
KENNEDY
VANGUARD
MOSSBANK
FILLMORE
MARYFIELD
YELLOW GRASS
CADILLAC
KINCAID
KISBEY
MANOR
PANGMAN
OGEMA
MANKOTA
CEYLON
WILLOW BUNCH
ALAMEDA
FRONTIER
CLIMAX
VAL MARIE
CARIEVALE
GAINSBOROUGH
CORONACH
TORQUAY

● ------SASKATCHEWAN CENTRES WITH POPULATION OF 201 - 300 (1976)

● ------SASKATCHEWAN CENTRES WITH POPULATION OF 301-500 (1976)

SOURCE: Saskatchewan Economic Review 1977, No. 31, October 1977, pp. 36-38.

SASKATCHEWAN DEPARTMENT OF THE ENVIRONMENT POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN SASKATCHEWAN CENTRES WITH POPULATIONS OF BETWEEN 200 AND 500	FIGURE 4 - 24


MAKWA
SPRUCE LAKE
PADDOCKWOOD
WEIRDALE
LOVE
MERVIN
MEDSTEAD
MAKWA
WASECA
VAWN
RABBIT LAKE
PARKSIDE
AYLSHAM
PAYNTON
RIDGEDALE
BEATTY
MISTATIM
VALPARAISO
KRYDOR
DOMREMY
YELLOW CREEK
SPEERS
DENHOLM
CARRAGANA
BEECHY
MAYMONT
ALVENA
ST. BENEDICT
SENLAC
EVESHAM
CANDO
LORDEN
PILGER
ARELEE
PRIMATE
SALVADOR
POSSTON
ST. GREGOR
TRAMPING LAKE
HANDEL
KINLEY
MEACHAM
SPRINGWATER
STENEN
HYAS
ARRAN
BRADWELL
ELSTOW
MAJOR
ZELMA
PLUNKETT
MARGO
RAMA
PLENTY
TESSIER
LOVERNA
LESLIE
SMILEY
HERSCHEL
MANITOU BEACH
VEREGIN
INSINGER
MARENGO
FLAXCOMBE
NETHERHILL
SOVEREIGN
BRODERICK
HAWARDEN
BROCK
GLENSIDE
TOGO
KREMEZER
MACRORIE
BLADWORTH
QUINTON
LEROSS
WROXTON
STRONGFIELD
DINSMORE
WILLOWBROOK
CALDER
MACNUTT
HUBBARD
GIRVIN
LIBERTY
DUVAL
GOODEVE
PENZANCE
PENWOOD
BIRSAY
AYLESBURY
BULYEA
MARKINCH
DUFF
WALDRON
BANGOR
RIVERHURST
BUENA VISTA
DILKE
ATWATER
TUGASKE
CHAMBERLAIN
SILTON
G-SAY-TAH
KILLALY
YARBO
HERALD
EYEBROW
BROWNLEE
FINDLATER
CRAVEN
EDENWOLD
DUBUC
MERDHAM
LANCER
TANTALLON
STEWART VALLEY
MARQUIS
TUXFORD
MCLEAN
RICHMOUND
SUCCESS
RUSH LAKE
ERNFOLD
HAZLET
BELLE PLAINE
WELWYN
WALDECK
DRINKWATER
KENDAL
GOLDEN PRAIRIE
WEBB
SHAMROCK
BRIERCREST
CODERRE
WILCOX
PIAPOT
OSAGE
FAIRLIGHT
NEVILLE
LANG
MAZENOD
PALMER
CREELMAN
HEWARD
MCTAGGART
ADMIRAL
ANEROID
WOODROW
FORGET
ANTLER
COLLARD
HAZENMORE
LIMERICK
METRONNE
KHEDIVE
HALBRITE
BENSON
STORTHOAKS
PERLAND
GLENTWORTH
ST. VICTOR
VICEROY
COLGATE
GOODWATER
ALIDA
WOOD MOUNTAIN
TRIBUNE
MACOUN
FROBISHER
GLEN EWEN
CONSUL
FIFE LAKE
MINTON
GLADMAR
LAKE ALMA
ROCHE PERCEE
BRACKEN
NORTH PORTAL

● ------ SASKATCHEWAN CENTRES WITH POPULATION OF 50 - 100 (1976)

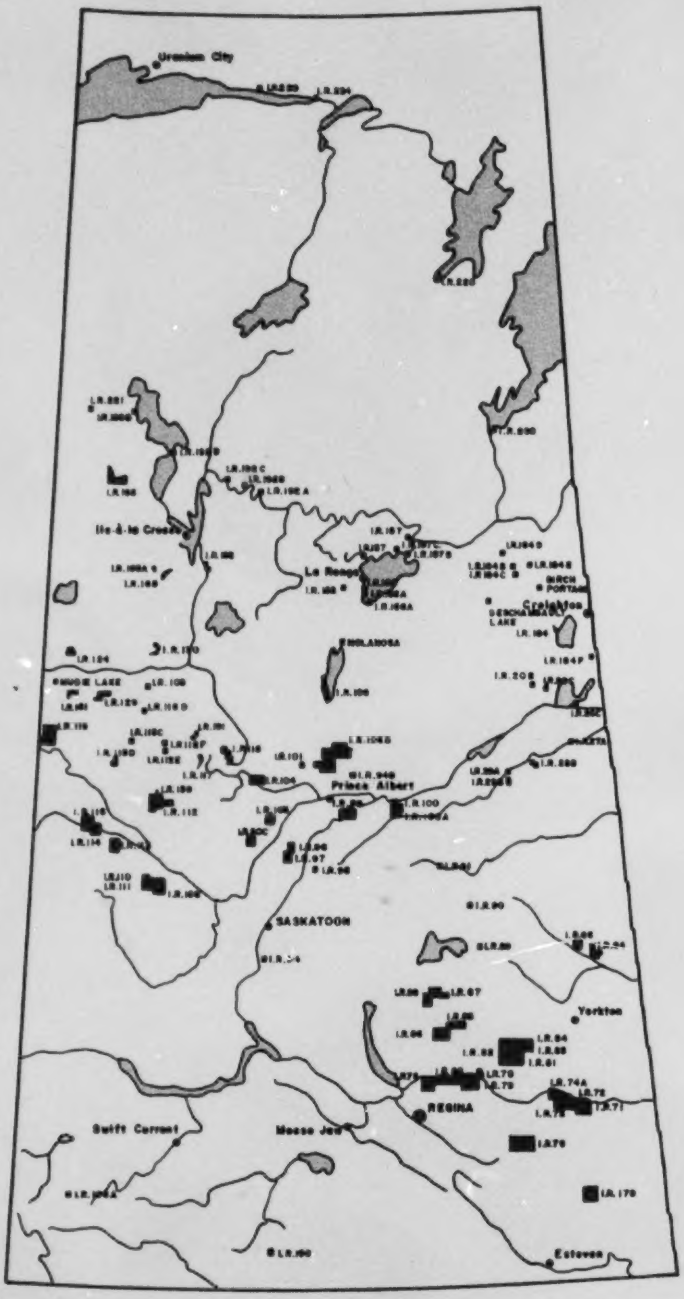
● ------ SASKATCHEWAN CENTRES WITH POPULATION OF 101 - 200 (1976)

SOURCE: Saskatchewan Economic Review 1977, No. 31, October, 1977, pp. 36-38.

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
SASKATCHEWAN CENTRES WITH POPULATIONS OF BETWEEN 50 AND 200

FIGURE 4-25


Uranium City
Ile-à-la Crosse
La Ronge
Creighton
Prince Albert
SASKATOON
Yorkton
REGINA
Moose Jaw
Swift Current
Estevan

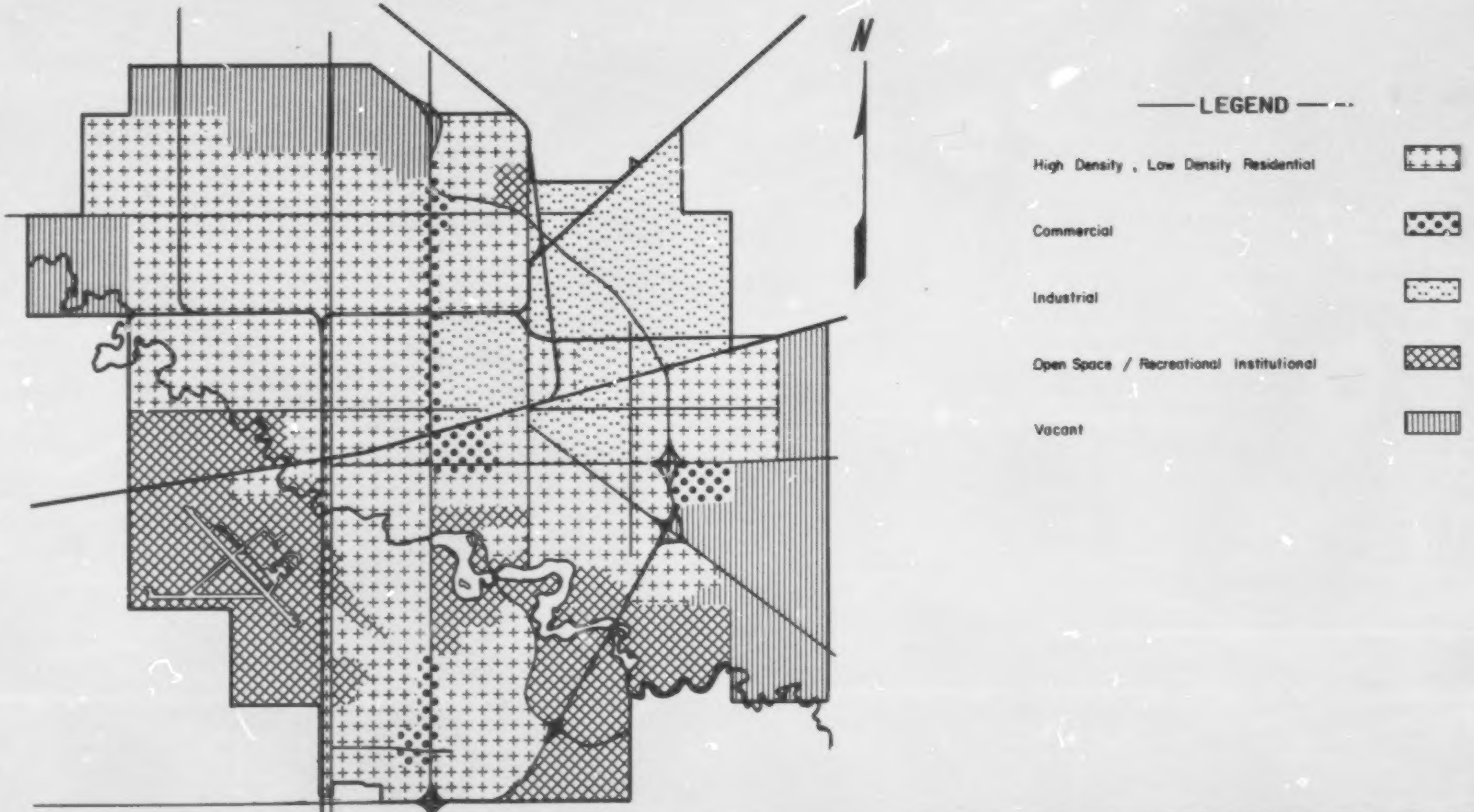
NOTE: SOME VERY SMALL RESERVES HAVE NOT BEEN SHOWN.

SOURCE: J.H. Richards and K.I. Fung, Atlas of Saskatchewan (University of Saskatchewan, 1969), p. 194.

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
INDIAN RESERVES
IN
SASKATCHEWAN

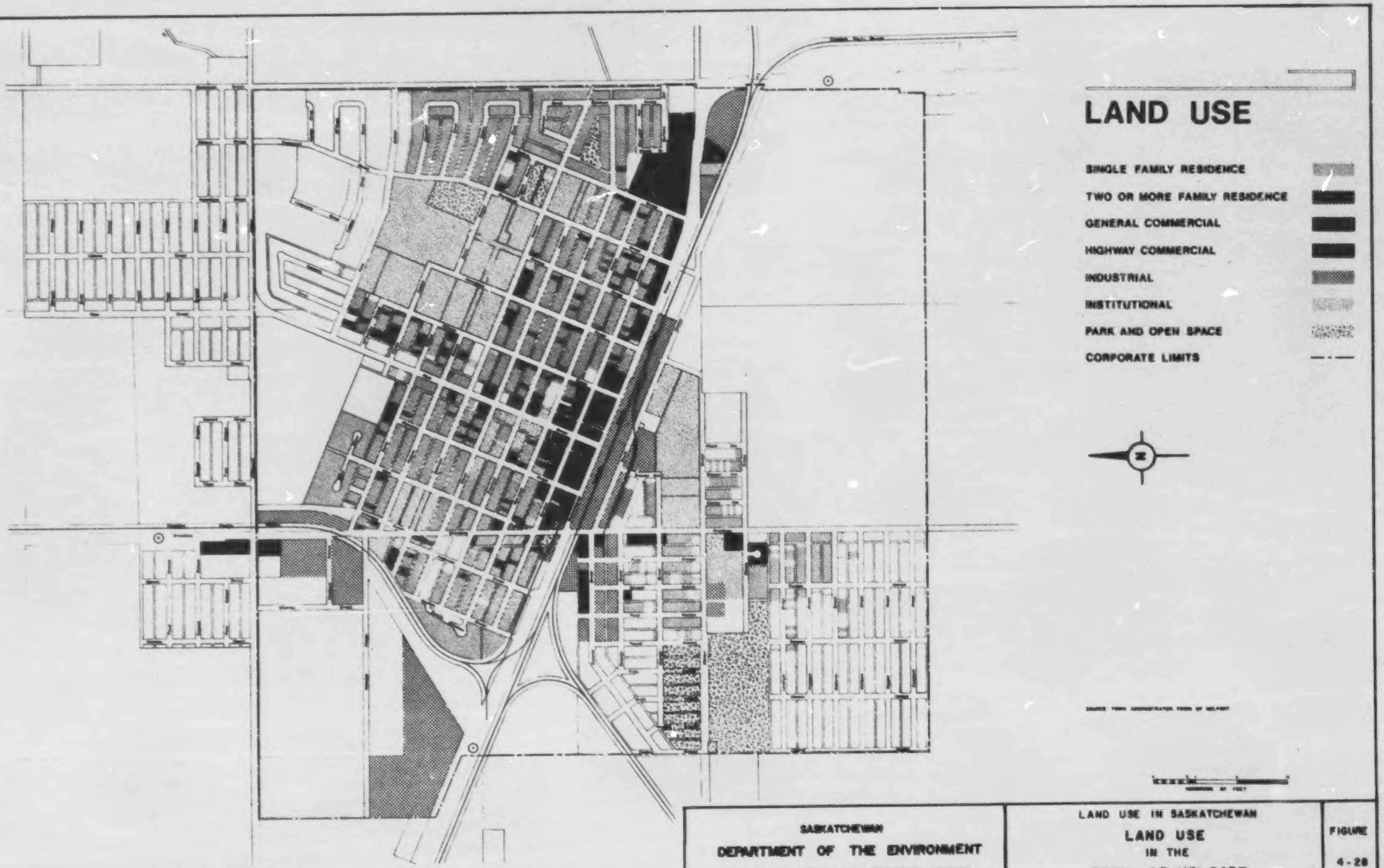
FIGURE
4-26


N
LEGEND
High Density , Low Density Residential
Commercial
Industrial
Open Space / Recreational Institutional
Vacant

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
URBAN LAND USE
IN
REGINA

FIGURE
4-27


LAND USE
SINGLE FAMILY RESIDENCE
TWO OR MORE FAMILY RESIDENCE
GENERAL COMMERCIAL
HIGHWAY COMMERCIAL
INDUSTRIAL
INSTITUTIONAL
PARK AND OPEN SPACE
CORPORATE LIMITS
N
SOURCE: TOWN ADMINISTRATOR TOWN OF MELFORT
HUNDREDS OF FEET

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN

LAND USE
IN THE
TOWN OF MELFORT

FIGURE
4-28

Table 4-97

Land use in Melfort

	Acres	Per cent of developed acreage (within the town limits)
Residential		
single family	206	24.7
multiple family	33	4
Commercial	41	5
Institutional	73	9
Public recreation (excluding golf courses and fair grounds)	36	4
Golf courses and fairgrounds	162	19.3
Industrial and railway	104	13
Streets and lanes	177	21
Total developed	832	100
Agriculture and undeveloped	608	
Total	1440	

Source: Saskatchewan Department of Municipal Affairs, *A Planning Study for The Town of Melfort*, Community Planning Branch, December, 1974, p. 36.

Housing, the most extensive land use in Melfort, represents 28.7 per cent of the total land use in the town. The number of dwelling units increased by 36 per cent between 1961 and 1971.

The industrial area, which includes manufacturing, service, industry, construction and wholesale and warehouse operations, represents approximately four per cent of the town. The area is located along the south and north side of Saskatchewan Avenue. There is also an industrial area in the northwest area of the town.

Recent studies of the commercial structures of North American cities have classified commercial activities into three categories:

(1) a hierarchy of both planned and unplanned centres, isolated stores or neighbourhood shopping centres;

(2) retail ribbons which, for example, may be highway-oriented; and

(3) specialized function areas.

Melfort falls into this general pattern. Isolated stores and street corner developments exist south of the railway tracks and east of Main Street, and there is also an unplanned shopping centre south of Saskatchewan Avenue. A number of businesses (mainly service stations, motels and automobile dealers) located along Saskatchewan Avenue represent a highway-oriented retail ribbon. The downtown area contains 56 different stores and services most of the community needs.

According to the North American standard of 1.4 acres per 1,000 people of local park area, Melfort appears to have a sufficient supply of park land (11.4 acres) for its area. With the exception of the school park, which contains a swimming pool, these facilities are non-specialized. Other recreational facilities total 308 acres, of which the fairgrounds constitutes 25.5 acres and the nine-hole golf course constitutes 136 acres.

Indoor recreation centres include two arenas and a curling rink. The town also uses gymnasiums and auditoriums at various schools and the civic centre with its auditorium and banquet hall.

Schools are reasonably well located in relation to the area which they serve and have adequate area to provide needed classroom space.

Melfort is the centre for health facilities in the district, which includes the Rural Municipality of Flett's Springs, Willow Creek, parts of the Rural Municipality of Kinistino, Lake Lenore, Pleasantdale and Star City. Thus the Melfort Union Hospital serves a population of approximately 11,000. Also situated at Melfort is the Provincial Geriatric Centre, which draws patients from the immediate Melfort area.

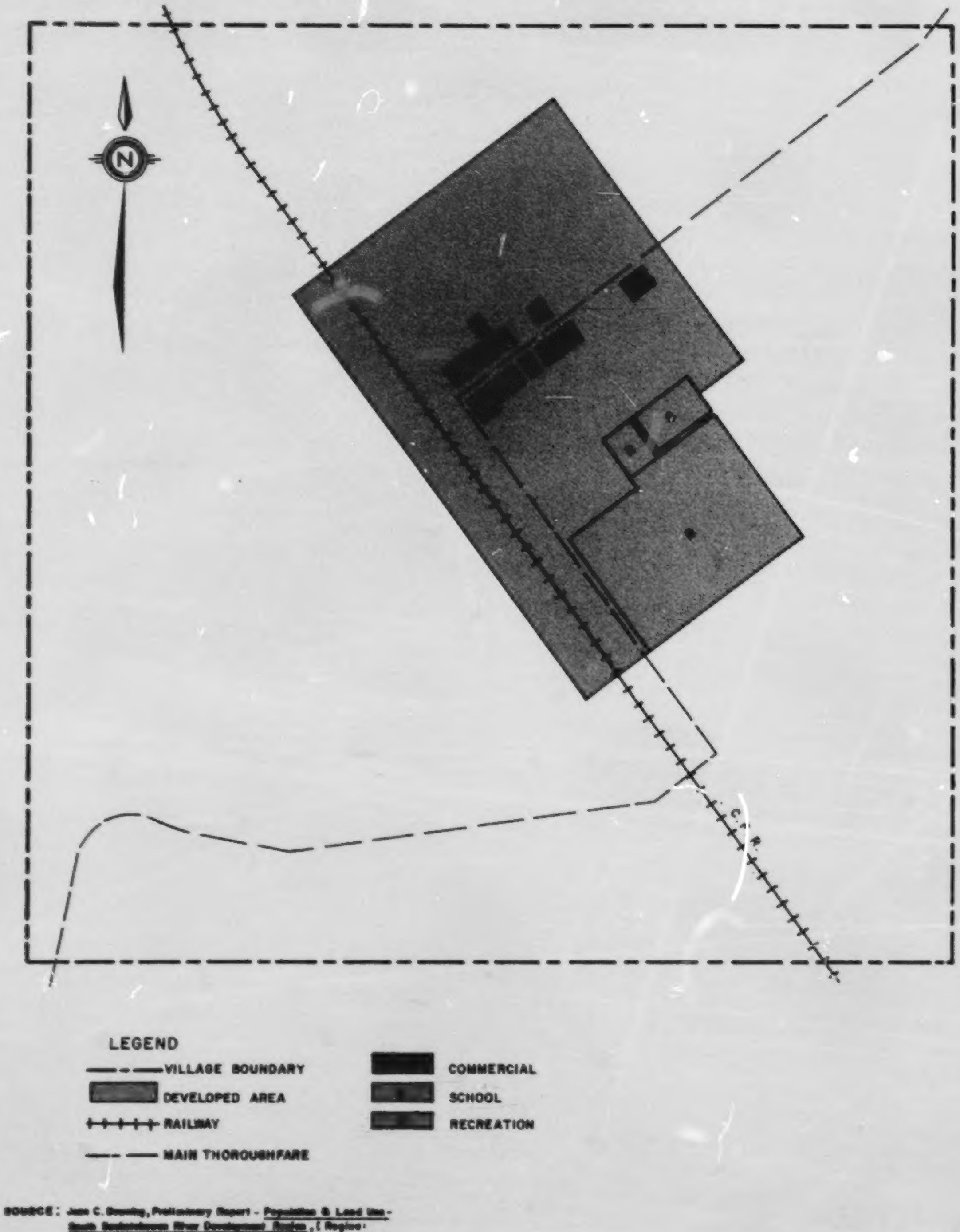
(c) Land use in Elbow

In some villages along the South Saskatchewan River, the largest categories of land use are streets and lanes (25 per cent) and railways and industry (23 per cent), which together generally comprise almost half of the developed areas. Residential lands represent 15 per cent and recreation lands 14 per cent. Schools and agricultural lands each account for five per cent, and commercial development accounts for two per cent. Figure 4-29 presents a typical example of this in the Village of Elbow.

4. Zoning bylaws

Zoning bylaws to control land use under *The Planning and Development Act* are in effect in urban and rural areas of Saskatchewan.

Zoning bylaws now exist in about 70 rural municipalities and planning districts. In addition, about 125 cities, towns and villages have enacted zoning bylaws. A zoning bylaw is a set of regulations regarding land use which enables a municipality to control development and the future use of land in the municipality. A zoning bylaw cannot change the existing use of land. At the time of approval of a development plan or a zoning bylaw, the existing use of land or a building may continue even if it does not conform with the plan or bylaw. If the non-conforming use is discontinued for six months or more, the future use of land must conform with the plan or bylaw. For example, if an area in an urban residential area is rezoned to allow commercial development, residences can still exist in that area. However, the bylaw would also allow commercial development. If a rural municipality identified an area as agricultural land, a commercial enterprise or residence, resort park or trailer park which existed prior to adoption of the zoning bylaw may continue but not expand.

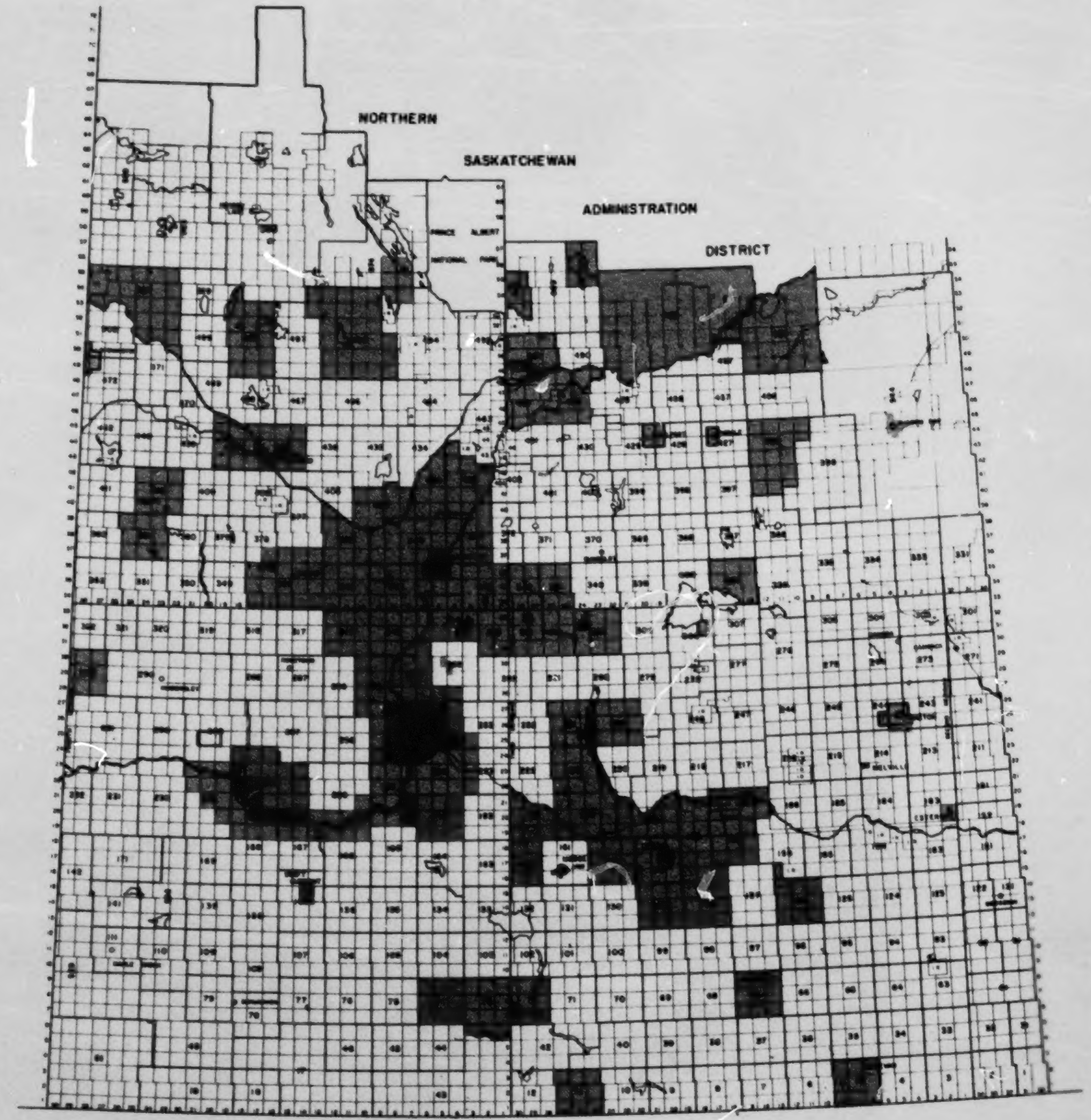

N
C.P.R.
LEGEND
VILLAGE BOUNDARY
DEVELOPED AREA
RAILWAY
MAIN THOROUGHFARE
COMMERCIAL
SCHOOL
RECREATION

SOURCE: Jean C. Downing, Preliminary Report - Population & Land Use - South Saskatchewan River Development Region, (Regina: South Saskatchewan River Development Commission, [illegible], p.38.

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
LAND USE
IN THE
VILLAGE OF ELBOW

FIGURE
4-29


NORTHERN
SASKATCHEWAN
ADMINISTRATION
DISTRICT
PRINCE ALBERT NATIONAL PARK

■ RURAL MUNICIPALITIES AND LOCAL IMPROVEMENT DISTRICTS WITH ZONING BYLAWS.

▨ PLANNING DISTRICTS WITH ZONING BYLAWS

SASKATCHEWAN **DEPARTMENT OF THE ENVIRONMENT** POLICY, PLANNING, AND RESEARCH BRANCH	LAND USE IN SASKATCHEWAN **AREAS OF RURAL SASKATCHEWAN** WITH **ZONING BYLAWS**	FIGURE 4-30

Table 4-98

Military lands in Saskatchewan

Name	Legal description	Size (acres)	Purpose
Alsask	Portion of Sec. 3, 10, 15, 22, Tp. 18, R. 29 W3	383	Radar station
Burdick	Portion of Sec. 2, 3, 10 and 11, Tp. 17, R. 24 W2	1,266	Weapon training area for militia and regular forces
Dana	Portion of Sec. 14, 16, 22, 23, Tp. 38, R. 27 W2, portion of Sec. 22-37-26-W2	451	Radar station
Dundurn	Tp. 32, 33, 34, R. 4, 5, 6, W3	57,592	Ranges and training area, ammunition depot (36,720 acres PFRA pasture)
Moose Jaw	Main and Saskatchewan St. portions of Sec. 5, 7, 8, 17 and 18, Tp. 16, R. 26 W2	1,567	Pilot and militia training
Primrose Air Weapons Range	Extending from Range 16 to 2[illegible], Tp. 67 to 73 W3	1,575,735	Aircraft training area
Prince Albert	Portion of Sec. 17 & 20 Tp. 49, R. 26 W2 10th St. & Eighth Ave.	661	Weapon training for militia
Regina	Portion of 11-18-19-W2 9th & 10th Avenue — Elphinstone St.; Broad St. South	31	Communication centre, militia and naval reserve training, transmitter station
Saskatoon	930 Idylwyld Drive N. 24th St. & 4th Ave.	11	Militia and naval reserve training
Yorkton	N½ 35-26-5-W2	343	Radar station
Total		1,638,041	

A council can obtain interim control if it intends to prepare a zoning bylaw or municipal development plan. Any proposed development must then receive written permission of the council which enables the council to regulate development.

Figure 4-30 shows rural municipalities and planning districts with zoning bylaws.

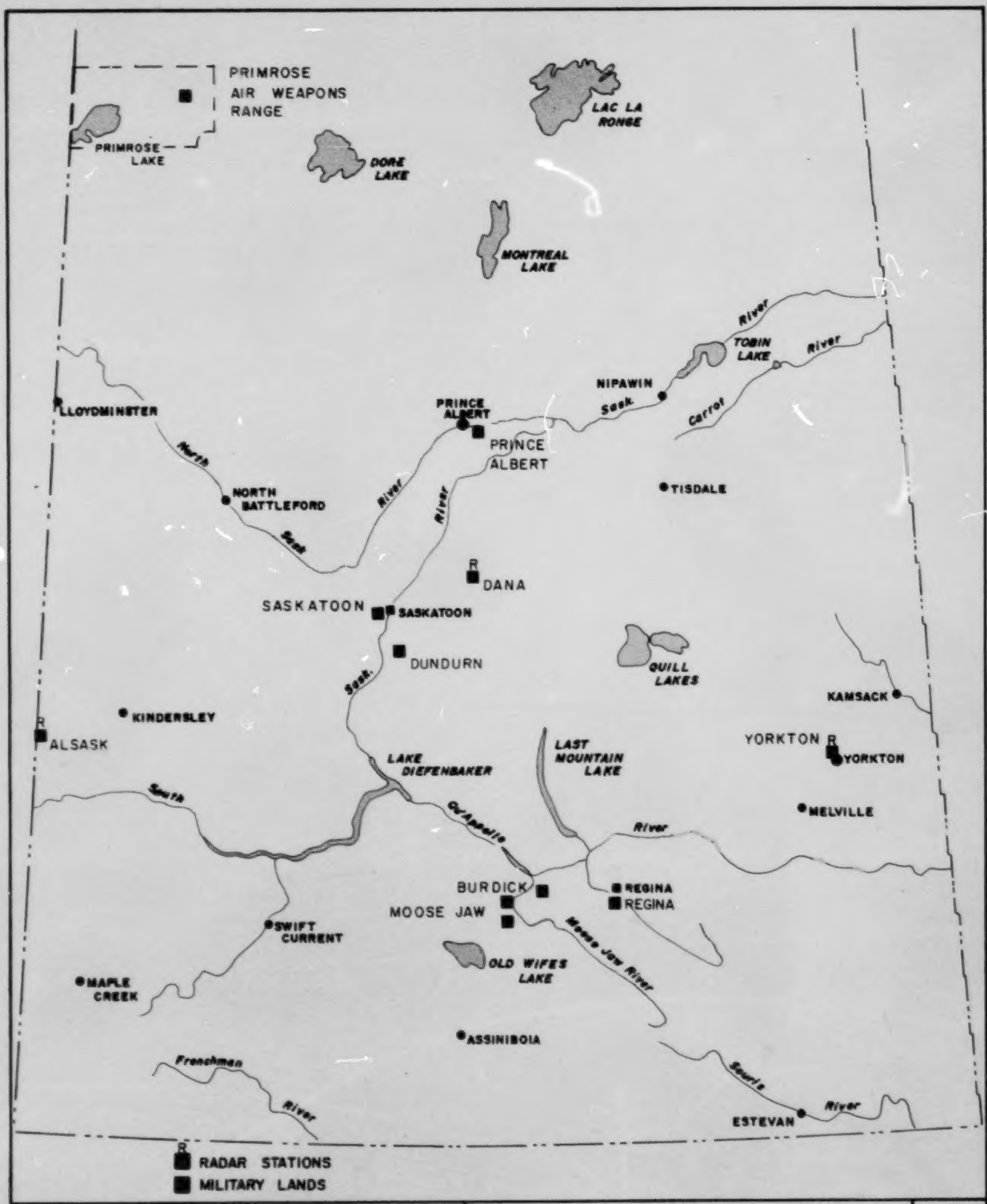
K. Military lands

There are ten major military areas in Saskatchewan, with a total area of approximately 1.64 million acres. The largest area is the Primrose Air Weapons Range (1,575,735 acres), and the smallest is in Regina (31 acres).

The lands are used for various activities, such as militia, regular forces and naval reserve training, weapon training and pilot training. Three of the areas are radar stations which form part of the NORAD radar surveillance system. With the exception of the Primrose Air Weapons Range, military land is federal Crown land.

The Primrose Air Weapons Range was established on April 1, 1954, under separate agreements between Canada and the Saskatchewan and Alberta governments. Canada agreed to pay compensation to area residents for the loss of use of the land. The range was established in perpetuity, but the lease was to be renegotiated in 20 years. The base agreement is presently being renegotiated.

Table 4-98 presents additional information on the military lands in Saskatchewan, and Figure 4-31 shows their general locations.


PRIMROSE AIR WEAPONS RANGE
PRIMROSE LAKE
DORE LAKE
LAC LA RONGE
MONTREAL LAKE
River
TOBIN LAKE
River
NIPAWIN
Sask.
Carrot
LLOYDMINSTER
PRINCE ALBERT
PRINCE ALBERT
North
NORTH BATTLEFORD
Sask.
River
River
TISDALE
R DANA
SASKATOON
SASKATOON
DUNDURN
Sask.
QUILL LAKES
KAMSACK
KINDERSLEY
R ALSASK
LAKE DIEFENBAKER
LAST MOUNTAIN LAKE
YORKTON R
YORKTON
South
Qu'Appelle
River
MELVILLE
BURDICK
MOOSE JAW
REGINA
REGINA
SWIFT CURRENT
Moose Jaw River
OLD WIFES LAKE
MAPLE CREEK
ASSINIBOIA
Frenchman
River
Souris
River
ESTEVAN
R RADAR STATIONS
MILITARY LANDS

SASKATCHEWAN
DEPARTMENT OF THE ENVIRONMENT
POLICY, PLANNING, AND RESEARCH BRANCH

LAND USE IN SASKATCHEWAN
MILITARY LANDS
IN
SASKATCHEWAN

FIGURE
4-31

Appendix

Common conversion factors from SI Metric to Canadian Imperial Units

Length

1 mm = 0.03937 in.
1 cm = 0.3937 in.
1 m = 3.28084 ft.
1 km = 0.62137 mi.

Area

1 km^2 = 0.3861 sq. mi.
1 ha = 2.47105 acres
1 m^2 = 0.000247 acres

Mass (weight)

1 kg = 2.204622 lbs.
1 kg = 0.0011023 tons (short)
1 kg = 0.000984 tons (long)
1 kg = 32.1507 troy ounces
1 g = 0.0321507 troy ounces
1 t = 1.102311 tons (short)
1 t = 0.9842065 tons (long)

Volume and capacity

1m^3 = 220 gal.
1 m^3 = 35.31466 cu. ft.
1 m^3 = 0.00081072 acre-feet
1 m^3 = 423.78 board feet
1 dm^3 = 0.423776 board feet
1 m^3 = 6.28982 barrels
1 litre = 0.219969 gal.
1 dm^3 = 0.027496 bushels
1 m^3 = 27.4962 bushels

Temperature

9/5 temperature in °C + 32 = temperature in °F

Abbreviations

Length

mm — millimetre
cm — centimetre
m — metre
km — kilometre

Area

km^2 — square kilometre
ha — hectare
m^2 — square metre

Mass

kg — kilogram
g — gram
t — tonne

Volume and Capacity

m^3 — cubic metre
dm^3 — cubic decametre
l — litre

Mass in SI metric to average capacity in Canadian Imperial Units for common field crops

Wheat, soya beans, potatoes, peas	1 tonne = 36.74 bushels
Rye, flax, corn	1 tonne = 39.37 bushels
Rapeseed, mustard seed	1 tonne = 44.09 bushels
Barley, buckwheat	1 tonne = 45.93 bushels
Mixed grains	1 tonne = 45.99 bushels
Oats	1 tonne = 64.84 bushels
Sunflower seed	1 tonne = 91.86 bushels

Other conversion factors

1 bushel per acre	kilograms per acre	kilograms per hectare
wheat	27.1	67
oats	15.4	38
barley	21.9	54
rye	25.5	63
flaxseed	25.5	63
rapeseed	22.7	56
mixed grains	20.2	50
peas	27.1	67
1 pound per acre	0.454 kilograms per acre	1.121 kilograms per hectare
1 ton per acre	0.907 tonnes per acre	2.242 tonnes per hectare
1 $ per bushel	$ per tonne	
wheat	36.74	
oats	64.84	
barley	45.93	
rye	39.37	
flaxseed	39.37	
rapeseed	44.09	
mixed grains	48.99	
peas	36.74	
1 $ per pound	$2.20 per kilogram	
1 $ per ton	$1.10 per tonne	

Bibliography

Abrahamsson, Kurt V. "Landforms of Southern Saskatchewan." *Background Papers Southern Prairies Field Excursion*. A. H. Paul, E. H. Dale and H. Schlichtmann, eds. Prepared for the 22nd Congress of the International Geographical Union. University of Saskatchewan, Regina Campus: Department of Geography, August 1972.

Alberta Department of Agriculture. *An Overview of Land Use in Alberta*. Resource Economics Branch, Edmonton, May, 1973.

Alberta Department of Lands and Forests. *Administration of Public Lands in Alberta*. Lands Division, December, 1970.

Alberta Environment Conservation Authority. *Land Use and Resource Development in the Eastern Slopes*. Report and Recommendations, Edmonton, September, 1974.

Alberta Land Use Forum. *Land Use Forum — Report and Recommendations*. January, 1976.

Baker, W. M. *A Report on Recreation Conditions on Jackfish and Murray Lakes*. Prepared for the Saskatchewan Department of Natural Resources, September, 1956.

Barber, S. H. *Farm Land Prices in Saskatchewan*. Saskatchewan Department of Agriculture: Economics and Statistics Branch, May 11, 1971.

Battiste, A. *A Layman's Guide to the Canada Land Inventory Land Capability Classification for Recreation and Present Land Use As Applied to Land in the Province of Saskatchewan*. Prepared for the Saskatchewan Department of Natural Resources, June, 1968.

Beaubien, C., River, P., and Lash, T. *Population, Technology and Land Use*. Science Council of Canada, January 28, 1975.

Beck, W. H. *A Guide to Saskatchewan Mammals*. Saskatchewan Natural History Society, Special Publication No. 1, Regina, 1958.

Blumenfeld, Hans. *Land Control and Land Prices*. Ottawa: Community Planning Association of Canada, June 6, 1973

Bosselman, F. and Callies, D. *The Quiet Revolution in Land Use Control*. Washington: Council on Environmental Quality, December, 1971.

Bosselman, F., Callies, D., and Banta, J. *The Taking Issue*. Written for the Council on Environmental Quality. Washington: U.S. Government Printing Office, July, 1973.

British Columbia Land Commission. *"Keeping the Options Open."* 1975.

Brown, J. A. "American Ownership and Purchases of Saskatchewan Farm Lands." *The Rural Councillor*, 7. (September, 1972).

Buckley, H. *Trapping and Fishing in the Economy of Northern Saskatchewan*. Report No. 3, Economic and Social Survey of Northern Saskatchewan. Saskatoon: Center for Community Studies, March, 1962.

Burton, T. L. *Natural Resource Policy in Canada*. Toronto: McClelland and Stewart Ltd., 1972.

Canada Department of Agriculture. *PFRA — The Story of Conservation on the Prairies*. Ottawa: Queen's Printer, 1961.

Canada Department of the Environment, *Water Quality: Saskatchewan-Nelson River Basin*. Inland Waters Branch, December 31, 1971.

______. *Index of Water Quality Stations: Saskatchewan*. Inland Waters Branch, September 1, 1971.

______. *Qu'Appelle Basin Study Report on Recreation*. Vol. 1. Inland Waters Directorate: Water Planning and Management Branch, Regina, 1972.

Canada Department of Indian Affairs and Northern Development. *Schedule of Indian Reserves and Settlements*. Ottawa: Information Canada, 1972.

______. *The Canadian Indian — Statistics*. Ottawa: Information Canada, 1973.

Canada Department of Regional Economic Expansion. *The Canada Land Inventory — Objectives, Scope and Organization*. The Canada Land Inventory, Report No. 1. Ottawa: Queen's Printers, 1970.

Canada-Saskatchewan-Manitoba. *Report of the Qu'Appelle Basin Study Board*. 1972.

Canada-Saskatchewan-Manitoba, Qu'Appelle Basin Study Board. *Wascana Creek Flood Study — Existing and Proposed Land Use Regulation*. Appendix I. Prepared by the Saskatchewan Department of Municipal Affairs for the Saskatchewan Department of the Environment, Regina, 1973.

Canadian Council of Resource and Environment Ministers. *The Administration of Crown Lands in Canada*. Montreal, 1972.

______. *Land Seminar Proceedings*. Fredericton, New Brunswick, September 19-22, 1972.

______. *Proceedings: Man and Resources Conference*. Toronto, November 18-22, 1973.

______. *Man and Resources Program in Saskatchewan*. November, 1973.

______. *Land Use Issues Facing Canadians*. A Discussion Paper prepared by the Land Use Task Force. September, 1975.

Canadian Federation of Agriculture. *Working Paper on Land Use Policy*. Ottawa, October to December, 1974.

Canada Grains Council. *Canadian Grains Industry Statistical Handbook*. 1978.

Canadian Intergovernmental Conference Secretariat. *Federal-Provincial Committee on Foreign Ownership of Land*. Report to the First Ministers. Ottawa: Information Canada, 1975.

Canadian National Committee for the International Hydrological Decade. *Discharge of Selected Rivers of Canada*. Ottawa: Information Canada, 1972.

_______. *Discharge of Selected Rivers of Canada*. Supplement 1. Ottawa: Information Canada, 1974.

Canadian Society of Technical Agriculturists. *Land Settlement*. A Report by a Canadian Society of Technical Agriculturists Committee. Ottawa, 1940.

Canadian Water Resources Association. *The Natural Water Environment: Is There a Need to Preserve What's Left?* 25th Anniversary Conference, Winnipeg, Manitoba, June 13-16, 1973.

Canadian Wildlife Federation. *Land Use Planning — An Ecological Approach*. February, 1969.

Canadian Wildlife Service. *Saskatoon Wetland Seminar*. Report Series No. 6. Ottawa, 1969.

Community Planning Association for Canada. *Battle for Land*. CPAC National Planning Conference Report. Regina, September 29 — October 2, 1974.

_______. *Battle for Land*. CPAC National Planning Conference. Workbook. Regina, September 29 — October 2, 1974.

Cram, J. S. *Water: Canadian Needs and Resources*. Montreal: Harvest House, 1968.

Crammer, V. *Land Use Programs in Canada: New Brunswick*. Environment Canada: Lands Directorate, April, 1974.

_______. *Land Use Planning Programs in Canada: Prince Edward Island*. Environment Canada: Lands Directorate, April, 1974.

Cranna, Marilee D. and Rowe, J. S. *Natural Areas in Saskatchewan*. Summation Report of the Saskatchewan Natural Area Survey. Prepared for the International Biological Programme — Conservation Terrestrial: National Research Council, April, 1974.

Croke, E. J., et al. *The Relationship Between Land Use and Environmental Protection*. Argonne, Illinois: Centre for Environmental Studies, March, 1972.

Curtis, V., ed. *Land Use and the Environment: An Anthology of Readings*. Chicago: American Society of Planning Officials, n.d.

Dale, E. H., Paul, A. H., and Schlichtmann, H., eds. *Tour Guide Southern Prairies Field Excursion*. Prepared for the 22nd Congress of the International Geographical Union. University of Saskatchewan, Regina Campus: Department of Geography, August, 1972.

Dojcsak, G. Victor. "The Mineral Resources of Southern Saskatchewan." *Background Papers Southern Prairies Field Excursion*, A. H. Paul, E. H. Dale and H. Schlichtmann, eds. Prepared for the 22nd Congress of the International Geographical Union. University of Saskatchewan, Regina Campus: Department of Geography, August, 1972.

Dominion Bureau of Statistics. *Agriculture Saskatchewan*. 1961 Census of Canada. Catalogue No. 96-538, Volume V — Part 3, Ottawa, June, 1963.

_______. *Agriculture Saskatchewan*. 1966 Census of Canada. Catalogue No. 96-609, Volume V (5-2), Ottawa, April, 1968.

Douglas, R. L. W., ed. *Geology and Economic Minerals of Canada*. Economic Geology Report No. 1. Geological Survey of Canada, Department of Energy, Mines and Resources. Ottawa: Queen's Printer, 1970.

Downing, Jean C. *Preliminary Report — Population and Land Use — South Saskatchewan River Development Region*. Regina: South Saskatchewan River Development Commission, 1960.

Ecologistics Ltd. *A Study of Land and Water Use At Emma and Christopher Lakes*. Final Report, Prepared for the Saskatchewan Department of the Environment, March, 1976.

Environment Canada. *Canada Water Year Book 1975*. Ottawa: Information Canada, 1975.

Fisheries and Environment Canada. *Historical Streamflow Summary Saskatchewan to 1976*. Inland Waters Directorate, Water Resource Branch. Ottawa: Information Canada, 1977.

_______. *Land Capability for Agriculture*. A Preliminary Report for the Canada Land Inventory. Lands Directorate, April, 1976.

Fawcett, Margot J., ed. *The 1978 Corpus Almanac of Canada*. Toronto: Corpus Publishers Services Ltd., 1978.

Hall Commission. *Grain and Rail in Western Canada*. The Report of the Grain Handling and Transportation Commission. Prepared for the Government of Canada, Volume 1, April 18, 1977; Volume 2, April 21, 1977.

Harper, T. A. "A History of Resource Management in Saskatchewan." Unpublished Typewritten Notes, 1967.

Hedlin, Menzies and Associates. *Wakaw Lake Land and Water Use Study Report*. Prepared for the Land Protection Branch, Saskatchewan Department of the Environment, August, 1975.

Hills, G. A. *The Ecological Basis for Land Use Planning*. Research Report No. 46. Ontario Department of Lands and Forests: Research Branch, December, 1961.

Johnson, R. P. and Atton, F. M. *The Regional Limnology of the Qu'Appelle Drainage System, Saskatchewan*. Fisheries Report No. 10. Saskatchewan Department of Natural Resources: Fisheries Branch, 1970.

Jonescu, M. Evelyn. "Natural Vegetation and Environmental Aspects of Strip Mined Land in the Lignite Coal Fields of Southeastern Saskatchewan." Unpublished Ph.D. Thesis, University of Saskatchewan, Saskatoon, 1974.

Joyce, T. V. *Provincial Agricultural Legislation in Western Canada*. Economics Branch Publication 72-8. Canada Department of Agriculture, 1972.

Kabzems, A. and Senyk, J. P. "A Comparison of Actual and Potential Forest Land Production in Saskatchewan." *Forestry Chronicle*, 43, 1967, pp. 257-264.

Kabzems, A., Newman, D. M., Bernier, D. L., and Zoltai, S. C. *Land Capability Classification for Forestry in Saskatchewan*. Technical Bulletin No. 6. Saskatchewan Department of Natural Resources: Forestry Branch, March, 1972.

Lewis, G. D. *An Inventory of Problems Associated With the Use and Development of Shoreland Areas in Saskatchewan*. Saskatchewan Department of the Environment: Administration, April 8, 1974.

Mair, W. Winston, "Development in Multiple Use of Canada's Public Lands." *Transactions of the Thirty-eighth North American Wildlife and Natural Resources Conference, March 18-21, 1973*. Washington, D.C.: Wildlife Management Institute, 1973, pp. 413-425.

Manitoba Department of Urban Development and Municipal Affairs. *Shoreland Recreation — An Environment Approach to Development*. Planning Guide No. 2. The Municipal Planning Branch, March, 1971.

Mann, Grady E. *A Regional Classification of Waterfowl Priority Zones for Southern Saskatchewan*. Report 1 resulting from a 1974 Southern Saskatchewan Wetlands Waterfowl Field Study. Prepared for the Saskatchewan Department of the Environment, 1975.

______. *The Importance of Saskatchewan Wetlands and Waterfowl Resources*. Report 2 resulting from a 1974 Southern Saskatchewan Wetlands Waterfowl Field Study. Prepared for the Saskatchewan Department of the Environment, 1975.

Martin, Chester. *Dominion Lands Policy*. Carlton Library No. 69. Toronto; McClelland and Stewart Ltd., 1973.

McCormack, R. J. "The Canada Land Use Inventory: A Basis for Land Use Planning." *The Journal of Soil and Water Conservation*, 26 (July-August, 1971), pp. 141-146.

McGee, G. *Mining and Environmental Law*. Mineral Bulletin MR 138. Canada Department of Energy, Mines and Resources: Mineral Resources Branch, Ottawa, 1973.

Mitchell. H. Hedley. "Birds of Saskatchewan." *Canadian Field Naturalist*, 38 (May, 1924), pp. 101-120.

Moss, H. C. *A Guide to Understanding Saskatchewan Soils*. Extension Publication 175. University of Saskatchewan: Department of Soil Science, 1965.

______. *The Major Soil Profiles of Saskatchewan and Their Agricultural Significance*. University of Saskatchewan, Saskatoon: Department of Soil Science, February, 1961.

Nelson, J. G., Scace, R. C. and Kouri, R., eds. *Canadian Public Land Use in Perspective*. Proceedings of a Symposium Sponsored by the Social Science Research Council of Canada, October 25-27, 1973. Ottawa, 1974.

Nova Scotia Select Committee on Non-Resident Ownership of Land. *Report to the House of the Assembly of the Select Committee on Non-Resident Ownership of Land*. Queen's Printer, November, 1974.

Ontario Institute of Agrologists. *Foodland — Preservation or Starvation*. A Statement on Land Use Policy. Erin, Ontario: Herrington Printing and Publishing Co., June, 1975.

Ontario Ministry of Natural Resources. *Guidelines for Land Use Planning*. January 1, 1974.

Ontario Select Committee on Economic and Cultural Nationalism. *Foreign Ownership of Ontario Real Estate*. Interim Report. Queen's Printer, 1973.

Paul, A. H. "Water Resources in Southern Saskatchewan." *Background Papers Southern Prairies Field Excursion*. A. H. Paul, E. H. Dale, and H. Schlichtmann, eds. Prepared for the 22nd Congress of the International Geographical Union. University of Saskatchewan, Regina Campus: Department of Geography, August, 1972.

Paul, A. H., Dale, E. H., and Schlichtmann, H., eds. *Background Papers Southern Prairies Field Excursion*. Prepared for the 22nd Congress of the International Geographical Union. University of Saskatchewan, Regina Campus: Department of Geography, August, 1972.

Pohorecky, Zenon. *Saskatchewan Indian Heritage: The First Two Hundred Centuries*. Saskatoon: Extension Division, University of Saskatchewan, 1970.

Prairie Provinces Water Board, Task Force on Water Quality. *Report of the Water Quality Task Force to the Prairie Provinces Water Board*. Part I and II. September, 1972.

Prince Edward Island, Province of. *Royal Commission on Land Ownership and Land Use*. Charlottetown, October 20, 1972.

Rawson, D. S. "A Check List of the Fishes of Saskatchewan." *Report of the Royal Commission on the Fisheries of Saskatchewan*. Regina, 1947.

Richards, J. H., and Fung, K. I. *Atlas of Saskatchewan*. Saskatoon: University of Saskatchewan, 1969.

Ross, Carlyle. *Economic Evaluation of Resident Big Game Hunting in Saskatchewan*. Research Report No. 1, Saskatchewan Department of Tourism and Renewable Resources: Research, Planning and Policy Branch, 1975.

Ross, C., and Paul, H. J. *Economic Evaluation of Non-Resident Big Game Hunting in Saskatchewan*. Research Report No. 2, Saskatchewan Department of Tourism and Renewable Resources: Research, Planning and Policy Branch, 1976.

Rump, P. C. *Land Capability Analysis of the Qu'Appelle River Valley*. Saskatchewan Water Resources Commission Report for the Qu'Appelle Basin Study Board, July, 1971.

Rump P.C. and Watson, R. C. *Land Use and Land Ownership in the Qu'Appelle River Valley*. Saskatchewan Water Resources Commission Report for the Qu'Appelle Basin Study Board, July, 1971.

Saskatchewan, Government of. *Submission to the Grain Handling and Transportation Commission*. October 21, 1975.

Saskatchewan Bureau of Statistics. *Saskatchewan Economic Review*. No. 31. 1977.

Saskatchewan Department of Agriculture. Sixty-seventh to Seventy-second Annual Reports of the Department of Agriculture to the Province of Saskatchewan. For the twelve months ended March 31, 1972 to 1977.

Saskatchewan Department of Agriculture. *Agricultural Statistics*. 1975-1978.

Saskatchewan Department of the Environment, *1973 to 1977 Annual Reports*. For the fiscal years ended March 31, 1973 to 1977.

______. *Water Quality Objectives*, Water Pollution Control Branch. 1975.

______. *Saskatchewan Environmental Legislation*. Policy, Planning and Research Branch. November, 1976.

______. *Designated Land Areas in Saskatchewan*. Policy, Planning and Research Branch, January, 1976.

______. *General Plans of Reservoir Development Areas*. 1976.

Saskatchewan Departments of the Environment and Mineral Resources. *The Rehabilitation of the Mining Environment in Saskatchewan: Proposed Study Program*. September, 1974.

Saskatchewan Department of Highways and Transportation. *Annual Report 1976-77*.

Saskatchewan Department of Mineral Resources. *Annual Reports*. For the fiscal years ended March 31, 1971 to 1976.

______. *Inventory and Outlook of Saskatchewan's Mineral Resources*. September, 1976.

______. *Mineral Statistics Year Book*, 1974-77.

______. *Potash in Saskatchewan*. Geological Sciences Branch, April, 1973.

Saskatchewan Department of Municipal Affairs. *Annual Report*. For the fiscal year 1976-77 ended March 31, 1977.

______. *A Planning Study for The Town of Melfort*. Community Planning Branch, December, 1974.

Saskatchewan Departments of Municipal Affairs and the Environment. *Proceedings of the Seminar on Urban Fringe Development Problems*. November 15 and 16, 1972. Regina, April, 1973.

Saskatchewan Department of Natural Resources. *Annual Reports*. For the fiscal years ended March 31, 1965 to 1973.

______. *The Fish of Saskatchewan*. Conservation Bulletin No. 7. Regina: Queen's Printer, 1959.

______. *Meadow Lake Provincial Park Provisional Master Plan*. Parks and Recreation Branch. 1972.

______. *Proceedings Land Use Planning Seminar*. Prince Albert, 1969.

______. *Visitation Report Provincial Recreation Development Areas 1971*. Parks and Recreation Branch, Regina, February, 1972.

Saskatchewan Department of Northern Saskatchewan. *Annual Reports*. 1974-75 to 1976-77.

Saskatchewan Department of Public Health. *Saskatchewan Population Statistics*. Reseach and Planning Branch, May, 1973.

Saskatchewan Department of Tourism and Renewable Resources. *Annual Reports*. 1974 to 1977.

______. *Forest Conservation in Saskatchewan*. Regina: Commercial Printers Ltd., 1975.

______. *Northern Fur Conservation Areas Production and Cash Value Figures*. 1973-74 and 1974-75.

______. *Saskatchewan's Forest Resources*. March, 1974.

______. *Statistical Review Fur Season Northern Fur Conservation Areas 1974-75*. Research, Planning and Policy Branch. n.d.

______. *Statistical Review of Wild Fur Production in Saskatchewan*, 1976-77.

______. *1977 Report of Hunter and Game Populations Surveys*. Fisheries and Wildlife Branch. 1977.

______. *Tourism and Recreation Development Strategies for the Qu'Appelle Valley*. September, 1978.

______. *Visitation Report Provincial Recreation Development Areas*, Parks and Recreation Branch, 1973.

______. *Visitation Report Provincial Recreation Development Areas*, Tourism and Recreation Planning Branch, 1974-77.

Saskatchewan Environmental Advisory Council. *1975 Annual Report*. For the fiscal year ended March 31, 1975.

Saskatchewan Executive Council. *Saskatchewan Economic Review*. Planning and Research, No. 26, 1972.

Saskatchewan Information Services. *Saskatchewan Notes*. 1977.

Saskatchewan Natural History Society. *The Blue Jay*. Volumes 32-36. 1974-78.

Saskatchewan-Nelson Basin Board. *Water Supply for the Saskatchewan-Nelson Basin, A Summary Report*. Saskatoon: Modern Press, 1972.

Saskatchewan, Province of. *Royal Commission on Agriculture and Rural Life*. Regina: Queen's Printer, 1955.

Saskatchewan Special Committee on the Ownership of Agricultural Lands. *Final Report of the Special Committee on the Ownership of Agricultural Lands*. Legislative Assembly of Saskatchewan, Regina, March 23, 1973.

Saskatchewan Water Resources Commission. *Annual Reports*. For the fiscal years ended March 31, 1965 to March 31, 1972.

______. *Recreation Use of Emma, Christopher and Anglin Lakes: Shoreline Characteristics and Occupancy Related to Water Levels*. Investigation and Planning Branch, September, 1967.

Shields, J. A., Rostad, H. P. W., and Clayton, J. S. *Inventory of Saskatchewan Soils and Their Capability for Agricultural Use*. Publication M13. Saskatoon: Saskatchewan Institute *Policy — Objectives, Components, Implementation*.

Soil Conservation Society of America. *National Land Use Policy — Objectives, Components Implementation*. Proceedings of a Special Conference November 27-29, 1972. Des Moines, Iowa, 1973.

Soper, J. Dewey. *The Mammals of Alberta*. Edmonton: The Hamly Press Ltd., 1964.

Southeastern Wisconsin Regional Planning Commission. *Floodland and Shoreland Development Guide*. Planning Guide Number 5. Waukesha, Wisconsin, November, 1968.

Statistics Canada. *Canadian Forestry Statistics 1970*. Catalogue No. 25-202. Ottawa: Information Canada, September, 1972.

______. *Housing — Household Facilities*. 1971 Census of Canada. Catalogue No. 93-737, Volume II — Part 4. Ottawa, December, 1973.

______. *Mineral Industries: Principal Statistics*. 1968 to 1975. Catalogue No. 26-204. Annual. Ottawa.

______. *Potash Mines: Principal Statistics*. 1976. Catalogue No. 26-222. Annual. Ottawa.

______. *Canada Yearbook 1976-77*. Catalogue No. CS11-202. Ottawa, 1977.

______. *General Review of the Mineral Industries: Mines, Quarries and Oil Wells 1975*. Catalogue No. 26-201. Ottawa, January, 1978.

______. *Agriculture Saskatchewan*. 1976 Census of Canada, Catalogue No. 96-808, Volume IV — Part 3, Ottawa, February, 1978.

______. *Coal Mines, Calendar Years 1974, 1975 and 1976*. Catalogue No. 26-206. Annual. Ottawa, November, 1976, October, 1976, and July, 1978.

______. *Travel, Tourism and Outdoor Recreation — A Statistical Digest*. Catalogue No. 66-202. Ottawa, October, 1972, October, 1976, and January, 1978.

______. *The Crude Petroleum and Natural Gas Industry 1973, 1974 and 1977*. Catalogue No. 26-213, Annual. Ottawa, December, 1974, February, 1976 and January, 1979.

Stonehouse, H. B., and Shields, J. A. *Acreage Summary and Soil Capability Inventory for the Indian Reserves in the Agricultural Region of Saskatchewan*. Publication M14. Saskatoon: Saskatchewan Institute of Pedology, 1970.

Stutt, R. A. "Changes in Land Use and Farm Organization in the Prairie Area of Saskatchewan During the Period 1951-1966." *Canadian Farm Economics*, 5 (February, 1971), pp. 11-19.

Symington, D. B. "Land Use in Canada — The Canada Land Inventory." *Canadian Geographical Journal*, 38 (February, 1968), pp. 4-15.

Tweedie, J. A. *Economic Minerals of Saskatchewan*. Saskatchewan Geological Survey: Department of Mineral Resources, 1973.

U. S. Fish and Wildlife. *Breeding Pair Report of Southern Saskatchewan*. 1977-78.

Waldron, R. M. and Haldahl. V. *Deterioration of Shelterbelts in Southwestern Saskatchewan*. Information Report NDR-X-127. Northern Forest Research Centre, Canadian Forestry Service. Edmonton, December, 1974.

Ward, E. N. *Land Use Programs in Canada: Alberta*. Environment Canada: Lands Directorate, March, 1975.

______. *Land Use Programs in Canada: British Columbia*. Environment Canada: Lands Directorate, July, 1976.

______. *Land Use Programs in Canada: Saskatchewan*. Environment Canada: Lands Directorate, March, 1976.

Yaworski, Robert. *Saskatchewan Agriculture: An Example of Change in Technology*. March, 1971.

Zisman, S. B. and Ward, D. B. *Where Not to Build, A Guide for Open Space Planning*, Technical Bulletin No. 1, United States Department of the Interior, Bureau of Land Management, Washington, D.C., April, 1968.

FACT SHEET 1

Land Use in Saskatchewan

Land Use Policy Committee

LAND USE WORKSHOP I

Saskatchewan, like most provinces in Canada, is faced with resolving present and potential conflicts over land use. As we continue to modify the land, choices must be made about how we can best use this limited resource.

In 1976, representatives of 19 provincial organizations met to discuss land use problems in Saskatchewan. This first workshop provided an important step towards the development of a provincial land use policy. The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet provides a brief review of the background and results of Workshop I.

Background of the Workshop

In June 1974, the Environmental Advisory Council submitted a report entitled "Land Use Policies in Saskatchewan" to Saskatchewan Environment Minister Honorable Neil Byers.

The report concluded that

> *"Land use planning and management in Saskatchewan, in the absence of an overall land use scheme, has become the responsibility of a host of government agencies and departments. Very real conflicts over land use patterns and priorities reflect this division of responsibility. In addition, there are agencies of government which are assigned tasks respecting conflicting land uses. Overall, no single agency is able to act as a powerful spokesman for land use and environmental concerns."*

Recognizing the concerns about land use and the problems faced by government in land use decisions, 19 major provincial organizations were invited by Mr. Byers to attend a workshop on land use at Echo Valley Centre, Fort Qu'Appelle in February, 1976.

In his address to workshop delegates, Honorable Neil Byers, Minister of the Saskatchewan Department of the Environment, outlined some of the land use problems which result from demands for land use.

- Clearing and breaking land for pasture and draining wetland for agriculture conflict with wildlife and recreation uses and conservation of natural land.
- Forestry interests are in conflict with recreation in the commercial forest area.
- Energy developments create conflicts with agriculture and recreation.
- Urban and urban fringe developments conflict with agriculture, recreation, and wildlife uses.
- Roads, particularly in sensitive areas, can conflict with agriculture and broader environmental concerns.
- Development of floodplains, lakeshores, and other hazard lands can conflict with agriculture, recreation, and wildlife uses.
- In urban centres, roads and industrial development can conflict with residential, park, and other recreational use.

Workshop Process

Before the workshop, delegates were asked to respond to the questions:

What is your definition of land use?

What are the issues of land use as you see them?

The responses indicated four general areas of concern: land allocation, land use control, land ownership, and land use practices. Delegates were also asked to priorize their land use concerns.

During the workshop, delegates were asked to examine these questions:

Do we need a land use policy?

What should be the elements of a land use policy?

How would we go about getting a land use policy?

Delegates were organized into small discussion groups to allow maximum discussion of these questions. Plenary sessions were held to present the findings of each group.

Results of the Workshop

A **definition of land and land use** was agreed to by delegates.

> "**Land** has soil, mineral, vegetation and wildlife components which may be on, above or below the surface. Air and water are closely related to land and are affected by land use decisions."
>
> "**Land use** is the utilization of a limited and fragile resource to satisfy man's basic needs and wants for now and for the future. Public and private policies and programs influence land use decisions."

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Why We Need a Land Use Policy

Delegates agreed unanimously that there was a need for a provincial land use policy. Some of the reasons for this need were identified.

1. "No policy is a policy." Although there is no overall land use policy to direct land use in Saskatchewan, policies are provided by numerous acts and regulations which have developed as the need arose. These fragmented policies no longer meet the need to arbitrate demands for land use.
2. To equalize pressures on farm economy.
3. To ensure a continuous resource base such as forests, agricultural land, wildlife, and water.
4. To eliminate "brush fire" solutions which are inadequate.
5. To co-ordinate land use decisions in various areas.
6. To protect future uses.
7. To assist socio-economic development.
8. To avoid short-term gains which produce detrimental effects in the long run.
9. To ensure open space which is a basic human right.
10. To provide a basis for the inevitable trade offs among interest groups for the use of land.
11. To co-ordinate existing pieces of legislation affecting land.
12. To provide a basis for monitoring impact of various types of land use.

Land Use Policy Guidelines

Policy guidelines to be included in a land use policy were proposed by delegates. Guidelines were developed for the following land use categories: agriculture lands, mineral lands, heritage lands, settlement lands, water, recreation lands, utility lands, forestry lands, waste disposal lands, and fish and wildlife lands. Concensus was neither attempted nor reached on the proposed guideline statements.

Implementation Alternatives

Delegates agreed that the public involvement process in the development of a land use policy should continue and proposed alternative methods for continuing the process. The delegates agreed to forward three specific recommendations to the government.

1. That a complete summary of the workshop should be prepared and circulated by the government.
2. That following detailed review and discussion by participating organizations, a follow-up conference should be held.
3. That the government should review the results from the workshop and be prepared to react to ideas generated and report on the status of land use policy development at the follow-up conference.

Follow-Up

The government accepted the recommendations of Land Use Workshop I. Considerable review of the results of Workshop I was undertaken by government agencies and participating interest groups prior to Workshop II.

Agencies Represented at Land Use Workshop I

Commercial Fisheries Development Committee
Community Planning Association
Conservation and Development Association
Environmental Advisory Council
National Farmers Union
Northern Municipal Council
Saskatchewan Association of Rural Municipalities
Saskatchewan Chamber of Commerce
Saskatchewan Council of Women
Saskatchewan Federation of Agriculture
Saskatchewan Federation of Labour
Saskatchewan Forestry Association
Saskatchewan Mining Association
Saskatchewan Natural History Society
Saskatchewan Parks and Recreation Association
Saskatchewan Tourist Association
Saskatchewan Urban Municipalities Association
Saskatchewan Wildlife Federation
Saskatoon Environmental Society

Additional Reading

Land Use Workshop Summary Report. Environment Saskatchewan. 1976. 22 pages.
(Out of print. Available on loan from Saskatchewan Department of the Environment, 5th Floor, 1855 Victoria Avenue, Regina, Saskatchewan.)

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FACT SHEET 2

Land Use in Saskatchewan

Land Use Policy Committee

LAND USE WORKSHOP II

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential land use conflicts. As we continue to modify the land, choices must be made about how we can best use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet summarizes the highlights of the second land use workshop held in April, 1977 to reach consensus on guidelines for the development of a land use policy.

History of Workshop I

An important step towards the development of a land use policy for Saskatchewan was taken in 1976 when delegates from 19 provincial organizations attended a workshop to discuss the problem of land use. The outcome of this meeting was definition of the terms "land" and "land use" and unanimous agreement by those present that there is need for a comprehensive land use policy in Saskatchewan. Guidelines for a land use policy were proposed by the delegates, but no attempt was made to reach consensus. It was agreed that public involvement in the development of a land use policy should continue and that a follow-up workshop should be held.

Following Workshop I, the participating organizations submitted briefs outlining their reactions to the workshop results.

Workshop II—Organization and Process

Delegates from the same provincial organizations were invited to attend Workshop II. The land use policy guideline statements generated at Workshop I and the briefs submitted by the organizations prior to Workshop II were the basis for discussions at Workshop II.

The workshop format involved small group sessions for discussion of ideas and plenary sessions to test these ideas on the group as a whole. The primary objective of Workshop II was to reach consensus on the proposed land use policy guidelines.

Land Use Policy Guidelines on Which Consensus Was Reached

For convenience the statements are classified into philosophy, objectives, and procedures under the various land use categories. The procedures are listed as sub-statements introduced by a dash within the objectives.

Agriculture Lands

Philosophy:

1. Recognize and maintain aesthetic features of agricultural land.
2. Decision-making affecting agricultural land use ought to reflect a balance between environmental, social, and economic considerations.
3. Food production to feed a hungry world is the moral responsibility of the world community which directly relates to land use.
4. Recognize that the nature of the farm produce marketing systems has a direct influence on land use policy.
5. Provide a suitable system of land tenure.
   - provide a process for establishing new farmers.

Objectives:

1. Obtain optimum production in the long term from land designated for agricultural use.
   - preserve prime farm land for agricultural use.
   - regulate the allocation of agricultural land for other uses.
   - provide opportunities for rural living and recreational areas on a planned basis through zoning with appropriate property tax changes.
   - provide information on rights of property owners for various classes of land use.
2. Encourage development of integrated land use plans for agricultural lands, considering the potential for additional uses at various times (eg. recreation/hunting/wildlife/etc.). This should especially apply to CLI classes 4, 5, 6 and 7.
   - provide information on alternative agricultural and other uses of land.
   - provide a system to compensate private owners where they provide services that benefit other resource users (eg. hunting) and where a demonstrable cost is evident.
   - crown land leases should be specific as to use and time of use.
3. Encourage retention and replacement of protective watershed vegetation.
4. Crown lands should be regulated to encourage the retention of native vegetation.
5. Retain the family farm and viable rural communities.
   - limit foreign ownership of land (existing policy not restrictive enough).

6. Emphasize programs and practices which encourage good husbandry and soil conservation.
   - encourage field and roadside shelter belts.
7. Provide a system for ensuring economic returns to prevent a farmer being forced into unsound environmental and land use practices.

Mineral Lands

Philosophy:

1. A detailed study of environmental, social, cultural, and economic ramifications, as well as the need should precede exploitation of any mineral lands.

Objectives:

1. Ensure that mined land is reclaimed to the highest possible use.
   - require prior approval of plans for reclamation through review by government agency.
   - require mining companies to notify landowners and adhere to good housekeeping practices.
   - provide adequate compensation to affected landowners.
   - minimize the total disturbance time caused by mining activities.
2. Identify and exclude specific land use areas from mining activity (eg. wilderness areas, parks, ecological reserves, etc.).
   - establish priorities for mineral development through better use of mineral resource inventories.
   - require public input into decision-making prior to any major mining developments.

Water

Philosophy:

1. Initiate sound water management programs with emphasis on conservation, consistent with both public and private interests.
2. Ensure that social and environmental costs are weighed equally with economic considerations in any water development projects.
3. All water, surface and underground, be treated as a limited resource to be conserved.

Objectives:

1. Recognize the close relationship between the quality of water and the uses made of adjacent lands.
   - consolidate provincial water management legislation and regulations.
2. Ensure the protection of land quality in any irrigation developments.
3. Control of the use and movement of water should be administered on the basis of river basin areas.
   - senior governments be responsible for clearing and maintaining drainage channels.
4. To strive for good quality water.
   - ensure water testing which monitors all aspects of water pollution.
5. Permanent water bodies on public and private land be protected as stabilizing factors in the watershed.
6. River corridors, lakes, and streams be identified and appropriate measures be taken to preserve them and ensure continued public access.

Heritage Lands

Philosophy:

1. To preserve good representative examples of the Saskatchewan landscape.

Objectives:

1. Recognize the need for historic and archaeological sites, wildlife sanctuaries and sites for environmental education and research.
   - development mechanisms to encourage public input into designation of heritage sites.
2. Establish a system of ecological reserves to ensure the preservation of viable populations of all native plants/animals.
   - ensure that owners of land selected for heritage sites receive adequate compensation.

Settlement Lands

Philosophy:

1. Develop a regional growth policy which would rationalize rural-urban growth patterns.
2. Reduce rural depopulation.
3. Encourage urban decentralization through limiting growth of major urban centers.

Objectives:

1. Provide for urban green spaces and recreation lands.
   - encourage inter-community co-operation for the supply of services.
   - develop alternative for land servicing.
   - encourage municipalities to develop a classification plan to identify land requests for schools, neighborhood parks, etc. in order to promote more orderly development.
   - encourage development of recreation facilities for urban needs consistent with a proper land use policy.
2. Develop more effective use of land utilized for transportation.
3. Make more effective use of urban land by emphasizing urban renewal in the central core.
   - better design of urban subdivisions thereby reducing sprawl.
4. Wherever practical agricultural land used for settlement should be CLI classes 5, 6 and 7.

Fish and Wildlife Lands

Philosophy:

1. Maintain a balance between sport, commercial, and domestic fishing based on sound resource management principles.
2. Provide for an equitable distribution of opportunities for citizens to enjoy fish and wildlife resources.

3. Minimize the degree of conflict between fish and wildlife interests and other land uses, with all recreation users bearing a substantial portion of the costs.

Objectives:

1. Develop management programs which will be designed to provide maximum wildlife production from lands designated for wildlife.
   - — maintain accurate inventories of wildlife resources and of wildlife habitat.
   - — ensure hunting privileges are such that wildlife stocks are not depleted.
   - — provide a system to compensate farmers for wildlife depredation on prime agricultural land (through licence fees or through the public purse).
2. Protect endangered species and their habitats.
   - — eliminate the discharge of poisonous wastes into watercourses.
3. Protect sensitive areas such as spawning and breeding grounds.
   - — create public awareness of the resource and the natural balance of nature.
   - — encourage landowners in, and provide financial support for the preservation of wildlife habitat (habitat subject to classification for wildlife values).
4. Develop an interdisciplinary approach to fisheries management to maximize social, recreational and economic benefits from such resources on a sustained yield basis.

Waste Disposal Lands

Philosophy:

1. Waste disposal at production facility must be a basic element in production cost.
2. Accept the idea that environmental protection and conservation take precedence over economic consideration when irreversible and/or undesirable consequences may result.

Objectives:

1. Minimize land used for waste disposal by
   - — encouraging recycling.
   - — promoting continued research into waste technology.
   - — encourage disposal of effluents (eg. sewage from lagoons) as a method of irrigation on forage lands.
2. Before any area is allocated for waste disposal (excluding toxic chemicals and radio active wastes), optimum waste treatment techniques for environmental protection and conservation must take precedence over economic considerations.
3. Before any area is allocated for disposal of toxic chemicals or radio active wastes, totally safe management systems must be known and provided for regardless of economic considerations.

Forest Lands

Philosophy:

1. Recognize the multiple use potential of forest lands.

Objectives:

1. Manage forest land as a sustaining multiple-use resource.
   - — improve forest management through better use of ecological data.
   - — provide necessary resources for fire and disease control.
2. Encourage integrated forest use by best use zoning.
3. The use of forest lands for agriculture should be restricted to those practices that are complementing but not detrimental to other forest resources and uses.
   - — encourage locally oriented forest industries.
4. Timber harvesting agreements must recognize the multiple use concept of the forest resource and provide for proper management of the forest.
5. Encourage afforestation of suitable, but for agriculture, sub-marginal lands.

Utility Lands

Philosophy:

1. Need to achieve a conservation and wise-use philosophy in the utilization of all our resources and the lands upon which they are based.
2. Prior to development of utilities there should be a detailed study of environmental, social, cultural, and economic ramifications and need for the life expectancy of the utility, and these ramifications must be considered in the allocation of land for the provision of utilities.

Objectives:

1. Maximize the use of existing corridors for the provision of utilities such as railroads, highways, power lines, pipelines, etc.
   - — co-ordinate future utility development through long-term planning.
2. Locate major utilities subject to the constraints listed under Philosophy No. 2 above.

Recreation Lands

Philosophy:

1. Recognize that individual differences and individual needs exist for recreational experiences.
2. Emphasize aesthetic values in recreational land allocation.
3. Promote use to the point where natural balances are not overburdened.
4. All resource users must be assessed appropriately to cover the cost of maintaining and restoring the resource.

Objectives:

1. Recognize that land, in addition to designated park land, is required for certain recreational pursuits and tourism (eg. ski areas).
   - — provide incentives to landowners to allow use of land by recreationists.
   - — provide a system of multi-use corridors for recreational and cultural user groups.
2. Improve public access to lakes and parks and encourage usage that is consistent with the carrying capacity of the resource.

- develop carrying capacity indicators as a guide to park management.
- develop an education information program on proper land usage to counter vandalism and misuse of private and public lands.

3. Develop lake and park zoning and use classification systems.
   - minimize the suburban (trailer city) emphasis in park development to ensure retention of the natural environment (relate to Philosophy No. 3 above).
   - encourage use of public transit in and to parks.
   - to prevent ribbon development around lakes and shorelines maintain substantial portions of undisturbed shoreland.
4. Utilize marginal lands for specific recreational uses, when feasible.

Note: Consensus could not be reached on the topics of farm size restriction and land speculation.

Further Development and Implementation of a Land Use Policy

Delegates present at Workshop II discussed alternatives for further development and implementation of a land use policy in Saskatchewan. It was agreed that further developments should include the printing and distribution of a summary of Workshop II, preparation of a summary of all existing legislation and regulations which relate to the land use policy guidelines, and further involvement of the public in the development of a land use policy to be initiated by a public education program.

It was also recommended that provincial government agencies use the approved guidelines on an interim basis until a final land use policy is approved.

Additional Reading

Land Use Workshop Summary Report. Environment Saskatchewan. 1976. 22 pages.
(Out of print. Available on loan from Saskatchewan Department of the Environment, 5th Floor, 1855 Victoria Avenue, Regina, Saskatchewan.)

Land Use Workshop II Summary Report. Environment Saskatchewan. 1977. 21 pages.

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FACT SHEET 3

Land Use in Saskatchewan

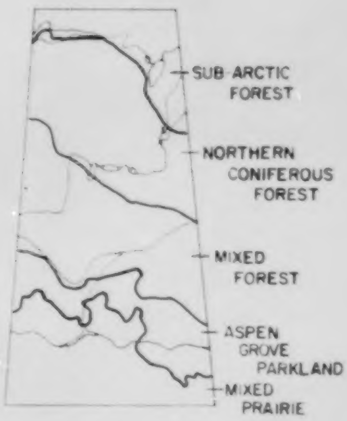
Land Use Policy Committee

LAND USE FACTS AND HIGHLIGHTS

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential conflicts over land use. As we continue to modify the land, choices must be made about how we can best use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet presents some basic facts about Saskatchewan's land and how it is now used.

- The area of Saskatchewan is 651,903 square kilometres (251,700 sq. mi.). This represents about 6.5% of the land area of Canada.
- The population of Saskatchewan is 961,500. This is about 4.4% of the total population of Canada.
- Saskatchewan contains 24% of the patented (privately-owned) land in Canada. About 38% of the land in Saskatchewan is patented.



NATURAL VEGETATION ZONES

Agriculture Lands

- Saskatchewan consists of a southern agricultural belt and a northern forest area. About 46% of the total land area of the province is occupied farm land.
- About 85% of Saskatchewan's agricultural land is patented, of which nearly 2 million acres or 1% is owned by Canadian (non-Saskatchewan) and foreign residents.
- According to the 1976 census, about 70% of the farm land in Saskatchewan is "improved." (Improved land includes crop lands and pasture lands that have been cleared and/or seeded to forage.) Saskatchewan contains almost half of the improved land in Canada.
- There are approximately 70,000 farms in Saskatchewan, and the average farm size is 939 acres. The percentage of Saskatchewan people living on farms dropped from 61.5% in 1931 to 25.2% in 1971. The average value of farm land in 1976 was $158 per acre.
- Of the nearly 10 million acres of Crown land designated for agriculture

  1.8 million acres are in PFRA community pastures.
  5.5 million acres are leased to farmers and ranchers.
  700,000 acres are in provincial community pastures.
  600,000 acres are in association community pastures.
  1 million acres are vacant.
- Saskatchewan's economy depends heavily on agriculture. Agricultural production represents about 50% of the net value of total provincial commodity production.

Forest Lands

- Over half of the province is designated as provincial forest. This is the largest area of provincial forest in any Canadian province. The value of forest products produced in Saskatchewan in 1976 was $103 million.
- There are nine provincial forests in Saskatchewan. One of these, the Northern Provincial Forest, covers the entire province north of 55 degrees latitude (north of Lac la Ronge), an area of about 78 million acres. The other eight provincial forests cover about 2.2 million acres.

Mineral Lands

- Although Saskatchewan ranks fifth in value of mineral production in Canada, on a per capita basis it is the third largest mineral producer among the provinces. Mining accounts for about 20% of the net value of total provincial commodity production.
- Saskatchewan is the second largest crude oil producing province in Canada. In 1975, Saskatchewan production amounted to 11% of the national crude oil production.
- Saskatchewan contains more than half the world's reserves of potash and has about 30% of the world's potash milling capacity. Production in 1976 was 5.5 million tons. Foreign exports of Saskatchewan potash in 1976 were valued at $407 million.

Water

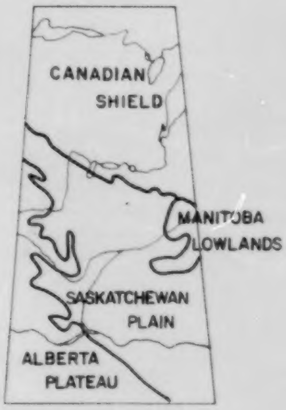
- Water covers 81,631 kilometres (31,518 sq. mi.) or 12% of the area of Saskatchewan. This includes streams, rivers, ponds, lakes, and man-made reservoirs.
- Saskatchewan has over 40 large dams (50 feet or greater in height). The largest is Gardiner Dam on Diefenbaker Lake with a height of 223 feet and a reservoir capacity of 8 million acre-feet.

Settlement Lands

- The total area incorporated into urban centres amounts to nearly 300,000 acres or 0.2% of the total land area in Saskatchewan. Cities occupy 36% of this land, towns 34%, and villages 30%.
- From 1961 to 1971, 38,000 acres of agricultural land was added to urban areas in Saskatchewan. Over the same period, the total agricultural land area in the province increased by 641,000 acres, much of which was marginal agricultural land. By comparison, Canada suffered a net loss of 4.5 million acres of farm land between 1966 and 1971.
- Saskatchewan has 22% of the Indian reserve land in Canada. Indian reserves occupy nearly 1.5 million acres or 0.9% of Saskatchewan land.

Recreation Lands

- Saskatchewan has 5% of the national park land in Canada. Prince Albert National Park, the only established national park in Saskatchewan, occupies 957,440 acres or 0.6% of the province.
- Saskatchewan has 2% of the provincial park land in Canada. The 17 provincial parks occupy just over 1 million acres or 0.7% of the province. Regional parks occupy another 16,000 acres of Saskatchewan land.



PHYSICAL REGIONS

Heritage Lands

- A total of 19 areas are set aside for preservation as protected areas. They occupy 45,310 acres of land.
- Saskatchewan's two national historic parks occupy 1,640 acres. In addition, lands designated as national historic sites, provincial historic parks, and provincial historic sites occupy an area of more than 1,000 acres.
- Lands devoted to research and field studies occupy at least 11,000 acres. Of this total, 6,441 acres or 58% are federal agricultural research stations.

Fish and Wildlife Lands

- A total of 66 species of fish and 78 species of wild mammals occur or have occurred in Saskatchewan. A total of 242 species of birds are known to breed in the province.
- Saskatchewan is divided into 37 game management zones to regulate hunting and game management.
- There are four types of designated wildlife areas in Saskatchewan.

  Wildlife management units occupy 2 million acres.
  Federal bird sanctuaries occupy 156,000 acres.
  Game preserves occupy 88,470 acres.
  Wildlife refuges occupy 6,000 acres.

  In addition, 53,000 acres of land have been purchased by the province under the Wildlife Development Fund.
- Saskatchewan contains about 295,260 square kilometres (114,000 sq. mi.) of productive waterfowl area, which is more than the waterfowl area of Alberta and Manitoba combined. One-third of the North American waterfowl population breeds in Saskatchewan.

Utility and Other Lands

- The total land area taken up by roads in Saskatchewan is 1.2 million acres. This represents 0.7% of the provincial land area. Military lands in Saskatchewan occupy 1.6 million acres or 0.9% of the provincial land area.
- Over 50% of the province's electrical energy needs are produced by two lignite coal thermal electric stations located near Estevan. About 25% is produced by two hydroelectric power stations, Coteau Creek and Squaw Rapids, located on the Saskatchewan River system. Bituminous coal, oil, and gas are burned in six other thermal electric stations which provide the remaining 25% of the province's electricity demand. Three additional privately-owned hydroelectric power stations supply electricity to mines in northern Saskatchewan.

Additional Reading

Rump, P. C. and K. Harper. 1977. *Land Use in Saskatchewan.* Environment Saskatchewan. 192 pages.

(Available on loan at libraries throughout Saskatchewan and from Department of the Environment, 5th Floor, 1855 Victoria Avenue, Regina, Saskatchewan.)

Richards, J. H. and K. I. Fung (Editors). 1969.
Atlas of Saskatchewan. University of Saskatchewan, Saskatoon. 236 pages.

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FACT SHEET 4

Land Use in Saskatchewan

Land Use Policy Committee

MINERAL LANDS

Saskatchewan, like most provinces in Canada, is faced with resolving present and potential conflicts over land use. As we continue to modify the land, choices must be made about how we can best use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet focuses on mineral lands.

What are minerals?

Minerals are non-living substances, formed by the processes of nature, that occur on or under the surface of the ground. Minerals may be in the form of a solid, liquid, or gas. Metals, such as copper and zinc, are sometimes referred to as minerals, although strictly speaking they are the refined products obtained by milling and refining the mineral (ore).

What types of minerals are found in Saskatchewan?

Metallic minerals, fossil fuels, and industrial minerals occur in Saskatchewan. Metallic minerals containing metals such as uranium, copper, zinc, gold, and silver are found in the rocks of the Precambrian Shield in northern Saskatchewan. Fossil fuels, which include oil, natural gas, and coal, occur in deposits located in sedimentary bedrock formations in central and southern Saskatchewan. Industrial minerals such as potash, sodium sulphate, and salt are found in the southern half of the province.

Who owns and controls Saskatchewan's mineral resources?

Since 1930, mineral resources have been under provincial control. Although the transportation of minerals out of the province is subject to federal jurisdiction, the utilization and management of mineral resources, including oil and natural gas, fall within provincial jurisdiction.

Ownership of minerals on or below the surface of land is called "mineral rights." It is separate from the "surface rights," which is ownership of the surface of land.

Mineral rights to some surface-owned Crown lands are in the name of the Crown, and mineral dispositions are issued for mineral exploration and development. The Department of Mineral Resources administers discovery, development, utilization, and conservation of all Crown-owned mineral resources. Mineral production on lands with privately-owned mineral rights, either accompanying the surface rights or separate from them, are also subject to regulation by the Department of Mineral Resources under a number of legislative acts and regulations. Legislation regulates exploitation of minerals, provides for proper methods of mine operation and environmental protection, and regulates reclamation of mined areas.

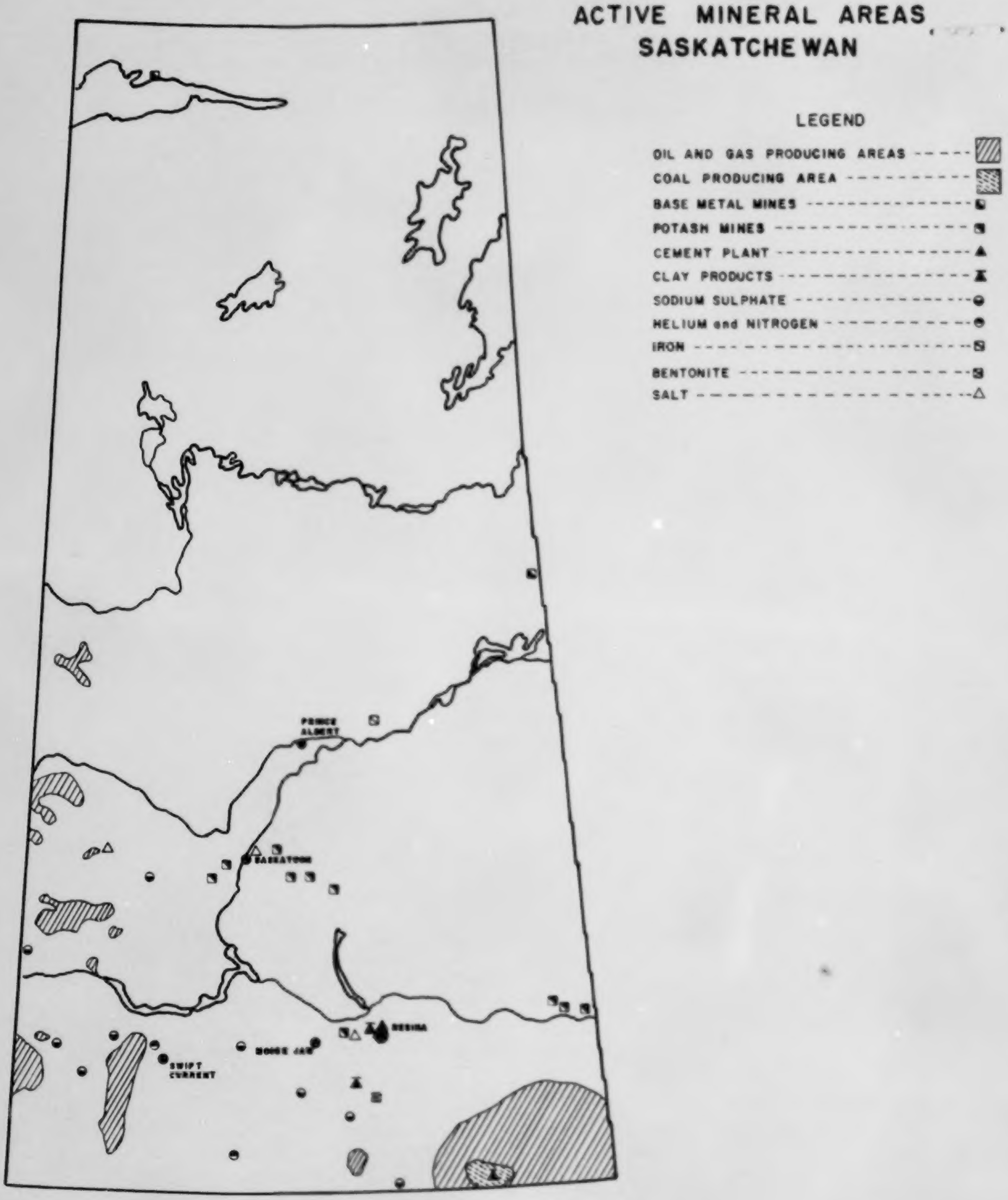
How much land is devoted to mineral production?

Individual mines, quarries, and petroleum and natural gas wells generally occupy very small surface areas which, in aggregate, amount to about 60,000 acres, or about 0.04% of the total land area of Saskatchewan. Of this amount, an estimated 27,000 acres, have been or are being quarried for sand, gravel, and clay. In the Estevan-Bienfait area of southeastern Saskatchewan, approximately 11,000 acres have been strip mined for coal, and at the present rate of production this is increasing by about 300 acres per year.

What are "recoverable mineral reserves"?

The volume of a mineral reserve which it is economically feasible to mine and technologically possible to mine today is known as the "recoverable reserve." A change in the world demand for a mineral or advances in mining technology could lead to changes in the recoverable volume of a reserve.

ACTIVE MINERAL AREAS
SASKATCHEWAN


LEGEND
OIL AND GAS PRODUCING AREAS ▨
COAL PRODUCING AREA ▨
BASE METAL MINES ■
POTASH MINES ■
CEMENT PLANT ▲
CLAY PRODUCTS ⧗
SODIUM SULPHATE ●
HELIUM and NITROGEN ●
IRON ■
BENTONITE ■
SALT △
PRINCE ALBERT
SASKATOON
REGINA
MOOSE JAW
SWIFT CURRENT

Minerals Mined in Saskatchewan

Fossil Fuels

Oil

- Crude oil is found in four areas of Saskatchewan.
  Light gravity oil is found in the Weyburn-Estevan and Kindersley areas.
  Medium gravity oil is recovered near Swift Current and Weyburn.
  Heavy gravity oil is found near Lloydminster and Kindersley.
- By the end of 1976, 10.5 billion barrels of oil had been discovered in Saskatchewan of which it was estimated only 2.17 billion barrels could be recovered by techniques currently available. Of this recoverable oil 1,493 million barrels were produced from 1940 to 1976, leaving recoverable reserves at the end of 1976 of 673 million barrels.
- Recent estimates of the heavy oil potential of the Lloydminster area indicate a possible 7.4 billion barrels of oil in addition to 2.46 billion barrels previously recognized.

Coal

- Lignite, an immature form of coal having high ash residue and a low thermal value, occurs across southern Saskatchewan in the Ravenscrag formation.
- Estimated economic coal reserves of southern Saskatchewan are 5,674 million tons or about 10% of Canada's reserve. These economic reserves are distributed as follows:

Estevan Basin	16%	Wood Mountain Basin	28%
Willow Bunch Basin	42%	Shaunavon-Cypress Basin	14%

- Additional coal resources will become economic in the future with improved recovery technology and as the value of coal increases due to depletion of crude oil and natural gas reserves.
- Saskatchewan produces about 18% of the nation's coal. It is used mainly for power production in Saskatchewan and Manitoba.
- In 1976, 5.17 million tons were produced; 3.73 million tons were used at Estevan and Boundary Dam power stations.
- To date, over 60 million tons of coal have been produced from the Estevan area.

Natural Gas

- Natural gas may be associated with oil, dissolved in solution with oil, or non-associated in a reservoir under high pressure.
- Saskatchewan's remaining recoverable associated gas reserves at the end of 1976, were 29.6 billion cubic feet.
- Remaining recoverable dissolved gas reserves at the end of 1976 were estimated at 26.7 billion cubic feet.
- Remaining recoverable non-associated gas reserves at the end of 1976, were estimated at 726 billion cubic feet.
- For comparison a 1200 square foot area house in Saskatchewan with gas furnace and water heater consumes an average of 227 thousand cubic feet of natural gas per year.

Industrial Minerals

Potash

- Deposits occur in a broad zone extending northwest from the southeast corner of the province. Along the northeast boundary of the zone, from Esterhazy to Lloydminster, the deposits are at a depth of about 2,500 feet, and along the Saskatchewan-North Dakota border they are at a depth of 6,000 to 9,000 feet.
- Ten potash plants in Saskatchewan have an annual production capacity of 8.3 million tons of potassium oxide. In 1976, production was 5.5 million tons.
- Estimated recoverable reserves are 74 billion tons.

Sodium Sulphate

- Sodium sulphate is deposited by saline lakes on the prairies and is mined by bulldozer and dragline.
- Eight operating plants produced 459,551 tons in 1976.
- There are 21 major deposits in the province with reserves of about 60 million tons.

Salt

- Salt is produced at a plant near Unity and as a by-product of potash production near Belle Plaine.
- Total production capacity is 350,000 tons per year. In 1976, 326,335 tons were produced.
- Although no estimate is available, salt reserves are immense.

Sand, Gravel and Quartz Flux

- Sand and gravel deposits are widespread throughout Saskatchewan and are generally recoverable at the surface. In 1975, an estimated 11.5 million tons of sand and gravel were quarried.
- Quartz flux, a silica sand, is used for recovery of copper at Flin Flon.

Sulphur

- Medium "sour" or sulphur-containing oil is found in southwestern Saskatchewan and at Steelman in southeastern Saskatchewan. This oil is transported to Minnesota where the sulphur is extracted through a refining process.

Helium

- Helium is an inert, non-poisonous, non-flammable gas used in industry and research. It is a valuable resource.
- Helium has been identified at one locality near Swift Current and at two localities in the Wood Mountain area.
- In 1960, reserves were estimated at about two billion cubic feet.
- One helium plant operated near Swift Current from 1963 to 1977.

Clays

- Clays of varying degrees of usefulness are abundant in southern Saskatchewan.
- Ball clay is used in whiteware, china, and porcelain products.
- Fireclays are used in stoneware, sewer pipe, and facebrick.
- Bentonite, a clay formed from volcanic ash altered by seawater, is widely distributed in Saskatchewan. It is used in well-drilling mud and as a binder for iron ore pellets.

Metallic Minerals

Uranium

- Uranium ore is mined at Beaverlodge Lake near Uranium City and at Rabbit Lake near Wollaston Lake. A mine is proposed at Cluff Lake, south of Lake Athabasca, and another potential mine is located at Key Lake.
- Measured and indicated reserves of uranium oxide were 74,225 tons at the end of 1976. This represents about one-quarter of the proven uranium reserves in Canada.
- Sales of uranium oxide have fluctuated since they peaked at 5.9 million pounds in 1959. Sales in 1976 were 4.84 million pounds.
- Demand for uranium for use in electrical energy production is likely to increase as oil and natural gas reserves are reduced.

Copper, Zinc, and Nickel

- Copper and zinc ores are mined from Precambrian rocks in the Flin Flon area. Gold, silver, cadmium, selenium, and tellurium are recovered as by-products from these ores.
- In 1976, 22.86 million pounds of copper and 17.34 million pounds of zinc were produced from Saskatchewan ore at Flin Flon.
- Reserves of copper-zinc ore in the Flin Flon and Snow Lake areas of Saskatchewan and Manitoba are estimated at 17.5 million tons or about 11 year's production at current production rates.
- Small deposits of copper, copper-nickel, and copper-zinc-lead ores have been mined in other parts of northern Saskatchewan in the past.
- Nickel is a significant constituent of the uranium deposits at Key Lake.

Potential Mineral Development

Other mineral assets in Saskatchewan having potential for future development include cement rock, iron ore, magnesium, manganese, marl, quartzite pebbles, silica sand, pumicite, and graphite.

What is the economic value of mineral production in Saskatchewan?

In 1975, Saskatchewan ranked fifth among the provinces in value of mineral production at $826.5 million. In 1976, Saskatchewan's mineral production was estimated at $929.5 million, an increase of 3.9% over 1975.

An increase in the value of production of a mineral does not necessarily mean increased volume of production. It could be due to an increase in the price of the mineral, a factor which is governed by world demand. Or, both factors could be responsible for the production value increase.

For example, in 1976, the production of uranium increased by 238% (due to the operation of the Rabbit Lake mine). This, coupled with an increase in the price of uranium, resulted in an increase of 273% in the value of uranium production. During the same period, a temporary squeeze on potash prices and some reduction in the production volume resulted in a decline of 16.8% in the value of potash production. Petroleum production also declined during 1976, but the decline of 5.3% in production was more than offset by higher prices so that the value of petroleum production showed an increase of 9.2%.

Incentives for exploration and extraction of minerals fluctuate as demands change. For example, increases in the price of oil and revised royalty structures and incentives will encourage exploration and development of oil wells which would previously have been uneconomical.

What are some of the land use problems associated with mining?

Two types of problems are associated with the extraction of minerals. First, mining may conflict with other demands for use of the same land. For example, expansion of coal strip mining could conflict with agricultural or recreational interests. Some mineral lands may also be valued for protection of plant and animal species present. Seismic lines can detract from the aesthetic value of recreation and potential wilderness areas.

Although a mining operation may occur over a relatively short time period, disturbance of the surface can interfere with other uses of the land. In the past, little or no reclamation was carried out on land strip mined for coal. Sand, gravel, and clay burrow pits are generally not reclaimed at the completion of mining operations thus limiting further use of this land. Also, open pit mines can remove the mined land from most subsequent uses.

Second, there are environmental problems associated with exploration, extraction, and refining of minerals. In exploring for natural gas, oil, and metallic minerals in forested areas, survey lines have to be cut to obtain information on underground strata. Removal of this vegetation can result in increased runoff of precipitation and erosion of soils. Conducting exploration during the winter when the ground is frozen and using improved techniques and machinery can help to minimize damage.

Well drilling requires holding pits for drilling mud and slurry. Properly prepared pits can minimize the chance of mud flow into adjacent water bodies.

Oil spills and leaks in pipelines are a potential source of damage to soils and vegetation. Emergency measures have been prepared to allow quick action in the event of oil spills.

Disposal of waste and storage of by-products of industrial and metallic minerals present a problem to the mining industry. Leaching of salts and other chemicals from waste and storage piles can carry substances into streams, lakes, and rivers where they may detrimentally affect water-living organisms and water quality.

Substances released to the air from potash mines can fall to the ground and result in increased salt concentrations in the soil. Under proper control and close monitoring, salts do not leave the mine area.

Environmental land use issues related to mining uranium ore include adequate disposal of mine tailings and other radioactive materials, health hazards of exposure to radioactive substances, and procedures for preventing radioactive materials from contaminating the environment.

Although mining lands presently occupy small land areas in Saskatchewan, potential conflicts between land uses can still arise. To assist in resolving these potential conflicts, a land use policy is required.

Guidelines for Use of Mineral Lands

The following guidelines for use of mineral lands were approved by delegates attending Workshop II.

Philosophy:

1. A detailed study of environmental, social, cultural, and economic ramifications, as well as the need should precede exploitation of any mineral lands.

Objectives:

1. Ensure that mined land is reclaimed to the highest possible use.
    - require prior approval of plans for reclamation through review by government agency.
    - require mining companies to notify landowners and adhere to good housekeeping practices.
    - provide adequate compensation to affected landowners.
    - minimize the total disturbance time caused by mining activities.
2. Identify and exclude specific land use areas from mining activity (eg. wilderness areas, parks, ecological reserves, etc.).
    - establish priorities for mineral development through better use of mineral resource inventories.
    - require public input into decision-making prior to any major mining developments.

Additional Reading

Inventory and Outlook of Saskatchewan's Mineral Resources. 1976. Saskatchewan Department of Mineral Resources. 72 pages.

Economic Minerals of Saskatchewan. 1973. Saskatchewan Department of Mineral Resources. 23 pages.

Helium, The Space Age Gas. Saskatchewan Department of Mineral Resources. 17 pages.

Beck, L. S. 1971. *Mineral Resources and Potential of Northern Saskatchewan.* Saskatchewan Department of Mineral Resources. 18 pages. (mimeographed)

Potash in Saskatchewan. 1973. Saskatchewan Department of Mineral Resources. 34 pages.

Mineral Statistics Yearbook. 1976. Saskatchewan Department of Mineral Resources. 57 pages.

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FOREST LANDS

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential land use conflicts. As we continue to modify the land, choices must be made about how we can best use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet presents information about Saskatchewan's forest lands and how they are now being used.

Where are the forests in Saskatchewan?

Forest vegetation covers almost 60% of the land area of Saskatchewan, including all of the Precambrian Shield and part of the rolling plains of central Saskatchewan. This forest is part of the great boreal forest region of Canada, which extends from the Atlantic Coast to Alaska. Small areas of forest such as Moose Mountain and Cypress Hills exist further south in the grasslands region.

The boreal forest in Saskatchewan can be divided into four zones based on forest composition. Two zones are on the Precambrian Shield in the northern half of the province, and two lie between the Shield and the grassland region.

Northern Transition forest is a transition zone between the boreal forest and the tundra of northern Canada. Severe climate limits the growth of trees so that the forest cover is dwarfed, thin, and open. Black spruce is the predominant tree in this zone.

Northern Coniferous forest is located almost entirely on the Precambrian Shield and is characterized by numerous lakes, bogs, and rock outcrops. Climatic conditions allow reasonable tree growth, and closed forests occur where the soil depth is adequate. Black spruce is the predominant tree with associated jack pine and tamarack. Open jack pine forests characterize the sandy soils south and east of Lake Athabasca. Frequent fires also favour the spread of the jack pine.

Mixedwood forest occurs south of the Precambrian Shield where soils are deeper. As the name implies, both coniferous and broad-leaf trees occur in this zone. Trembling aspen, white spruce, balsam poplar, white birch, and balsam fir form the characteristic forest association on well-drained uplands. In the northwestern edge of this zone, large areas of swamp, bog, and muskeg are common and white spruce and trembling aspen are less prominent. Black spruce and tamarack predominate in the Manitoba Lowlands at the southeastern edge of the Mixedwood forest.

Aspen Parkland is a transition zone between the boreal forest and the grasslands of southern Saskatchewan. Trembling aspen is the most abundant tree species. The natural grasslands once associated with the aspen groves have largely disappeared under the advance of agriculture.

Who owns the forest lands of Saskatchewan?

The major forest areas in the province are owned by the Provincial Crown. Of the 150,000 square miles of forested land, about 135,000 square miles or 90% is owned by the Crown and is designated as *provincial forest.*

There are nine provincial forests described in The Forest Act. The largest by far is the Northern Provincial Forest. The other eight provincial forests — Porcupine, Fort a la Corne, Nisbet, Cypress Hills, Canwood, Torch River, Duck Mountain, and Moose Mountain — are much smaller with a total area of about 3,450 square miles.

Other provincial and federal Crown owned forest lands include some provincial parks, Prince Albert National Park, and some Indian reserves. The remaining forest lands are privately owned.

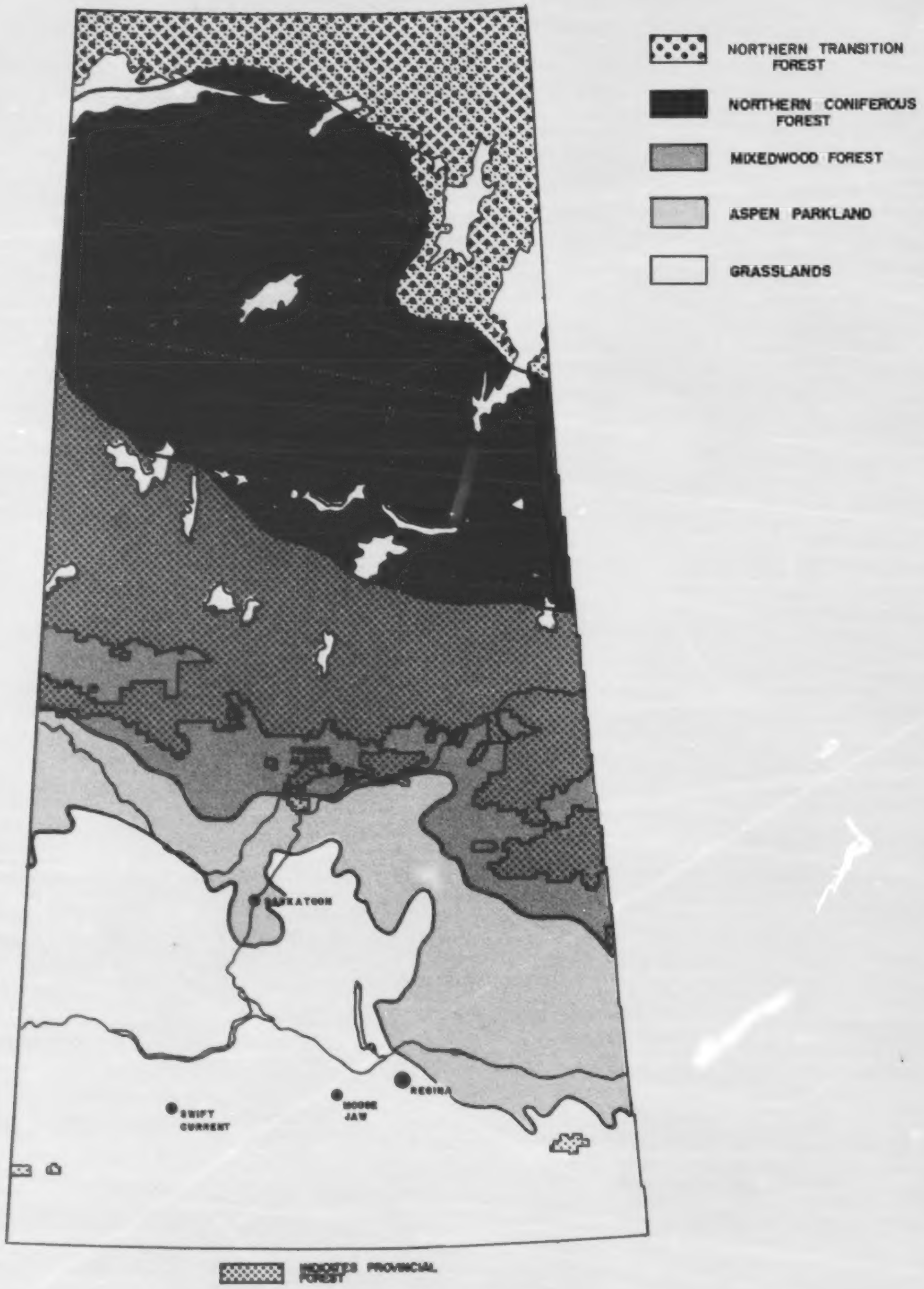
Who administers the forests?

The Department of Tourism and Renewable Resources (DTRR) and the Department of Northern Saskatchewan (DNS) jointly share the management of provincial forests under The Forest Act and Regulations. Timber or other products cannot be removed from provincial forest lands without proper authorization; dues are paid to the province for all products harvested. Long-term leases in the form of *Forest Management Licences* are issued, designating cutting quotas from specific areas. Disposition of timber on a short-term basis is provided by *permits.*

In 1973, amendments to The Forest Act allowed for changes in the terms and conditions of forest management licences to provide for better forest utilization. The amendments contained provisions to restrict harvesting methods by area and tree species and to increase prompt reforestation of cut-over areas.

The Forest Act and Regulations also provide for the reasonable use of forest lands for purposes other than the harvest of timber.

FOREST ZONES IN SASKATCHEWAN


NORTHERN TRANSITION FOREST
NORTHERN CONIFEROUS FOREST
MIXEDWOOD FOREST
ASPEN PARKLAND
GRASSLANDS
SASKATOON
SWIFT CURRENT
MOOSE JAW
REGINA
INDICATES PROVINCIAL FOREST

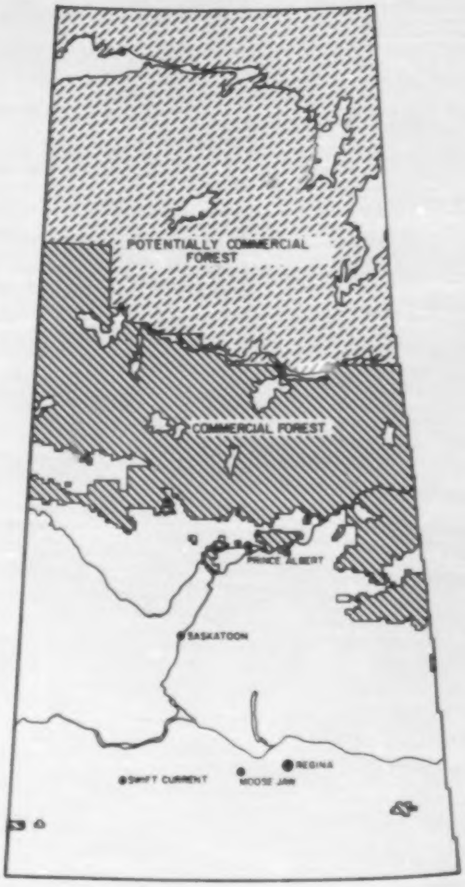
Where are the commercial forest lands in Saskatchewan?

The *commercial forest* zone contains lands that are accessible and capable of sustaining tree growth in perpetuity.

This zone forms a band about 200 miles wide across the central part of the province. It includes some northern coniferous forest, the mixedwood forest, some aspen parkland, and the forests of Duck Mountain, Moose Mountain, and Cypress Hills. These areas have good growing conditions for all native commercial tree species and are accessible for forest harvesting. Within the commercial forest zone about 53% of the land is productive and can be utilized for timber harvest. The remaining non-productive area consists primarily of swamps, rock, brush, and water.

About 95% of the timber harvest in Saskatchewan is from provincial forest land within the commercial forest zone.

The area north of the commercial forest is classed as *potentially commercial forest.* In time and with the aid of refined forest management programs, part of this area may be proven capable of supporting viable timber operations.

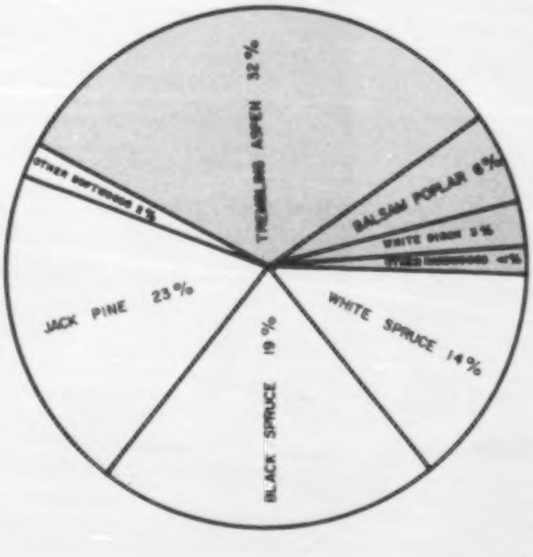


How important is Saskatchewan's forest industry?

The forest industry is one of Saskatchewan's major industries. The value of forest products produced in 1976-77 was over $122 million. The industry also contributes to the economy by providing employment and by earning foreign exchange through export sales.

Meadow Lake, Prince Albert, and Hudson Bay are the three major centres of the forest industry. Forest products include planed and rough lumber, studs, pulpwood, waferboard, fuelwood, and pressure-treated fence posts, telephone and power poles and railway ties.

Merchantable Volume* of Tree species on Productive Commercial Forest Land



* Merchantable volume is the timber which can be utilized by the forest industry.

What other uses are made of our forests?

Although timber harvesting is the dominant use of the forests, other uses compete for a share of this major resource. Recreational use of forests has increased greatly in recent years and is expected to increase in the future, especially adjacent to lakes and waterways. Several parks, heritage lands, and recreation areas are located within the commercial forest area of Saskatchewan.

Other uses include trapping, sport and native hunting, fishing, extractive industries such as mining and peat harvesting, and petroleum exploration. Cattle grazing and haying are permitted in suitable provincial forest areas bordering agricultural regions.

Do problems exist in the use of our forest lands?

Two types of problems are associated with the use of forest lands. First, conflicts exist among the many user groups that are demanding shares of this resource. With roads provided by the forest and mining industries, the northern forests have become more accessible to recreationists, who are demanding an increasingly greater portion of the forest.

The user groups are generally polarized in their demands. On one hand are users who want forest preservation. This includes environment-oriented recreationists, trappers, and hunters. On the other hand are those who utilize the forest and land resources such as the forest and mining industries.

The "multiple-use" or "integrated use" concept has been applied to forest lands in order to try to satisfy all user demands. It allows for moderate forest utilization while still enabling forest conservation for other activities and for the future.

Second, there are environmental problems associated with the impact of expanding forest industry. The major concerns are with cutting methods including the volume of annual harvest, the size of areas being clear cut, the width of leave strips left around lakes, streams and roads, and the excessive cutting of mature timber.

The effects of clearcutting on forest hydrology, fish and wildlife populations and forest aesthetics are of concern to environmentalists and other user groups that promote forest conservation.

An in-depth study of existing harvest practices in the commercial forest area of Saskatchewan was carried out in 1976. The proposed forest guidelines which resulted from this study are now under review by the Department of Tourism and Renewable Resources.

A comprehensive land use policy should recognize and guide the uses of forest lands as well as other lands in Saskatchewan and provide a means to deal with present and potential land use problems and conflicts.

Guidelines for Use of Forest Lands

The following guidelines were approved by delegates attending Land Use Workshop II.

Philosophy: Recognize the multiple use potential of forest lands.

Objectives:

1. Manage forest land as a sustaining multiple-use resource.
    - improve forest management through better use of ecological data.
    - provide necessary resources for fire and disease control.
2. Encourage integrated forest use by best use zoning.
3. The use of forest lands for agriculture should be restricted to those practices that are complementing but not detrimental to other forest resources and uses.
4. Timber harvesting agreements must recognize the multiple use concept of the forest resources and provide for proper management of the forest.
5. Encourage afforestation of suitable, but for agriculture, submarginal lands.

Additional Reading:

Rowe, J. S. 1972. *Forest Regions of Canada.* Canadian Forestry Service. Environment Canada. Pub. No. 1300.

Saskatchewan's Forest Resources. 1974. Department of Tourism and Renewable Resources. 28 pages.

Schultz International Limited. 1976. *Environmental Effects of Timber Harvesting on Saskatchewan Forests.* Report for Saskatchewan Department of the Environment.

Report 1 — Composite Report. 227 pages.
Report 2 — Study Blocks. 293 pages.
Report 4 — Proposed Forest Guidelines. 109 pages.
(Available on loan from Saskatchewan Department of the Environment 5th Floor, 1855 Victoria Avenue, Regina, Saskatchewan).

Teskey, A. G. and J. H. Smyth. 1975. *Saskatchewan's Forest Industry and its Economic Importance.* 1972. Canadian Forestry Service, Environment Canada. Information Report NOR-X-140. 156 pages.

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FACT SHEET 6

Land Use in Saskatchewan

Land Use Policy Committee

DEVELOPING A LAND USE POLICY

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet discusses the process of development of a land use policy.

Land Use Conflicts

In the past, sufficient land was available in Saskatchewan for rural and urban settlements and for development of other land uses such as agriculture, mining, forestry, roads, and recreation areas. However, as our demands for land and its resources have increased, so too has competition for land. Because the amount of land available is finite and its resources are limited, we are faced with resolving present and potential conflicts over land use.

Land use problems and conflicts in Saskatchewan may be considered insignificant by comparison with those experienced in other parts of the world and in some areas of central and western Canada. Although symptoms of land use problems are appearing in Saskatchewan, we are in a favourable position to examine our use of land and we have an opportunity to plan for future land use and management.

Conflicts arise as various demands compete for the same parcel of land. For example, urban and urban-fringe developments remove agricultural land from production. In turn, agricultural demands to drain wetlands and clear and break land for pasture conflict with wildlife and recreational interests.

Conflicts also develop when a particular land use on one parcel of land adversely affects adjacent land uses. For example, drainage of agricultural land can contribute to greater flood damage problems downstream. Roads and industrial development in urban centres conflict with residential and recreational interests. Development of recreational facilities can adversely affect adjacent agricultural and wildlife lands.

There is also a conflict between those who would like to "develop" land resources and those who urge "conservation" and "protection" of land resources. For example, conflicts arise over the use of land for forestry or agriculture and use of the same land for national and provincial parks, or ecological reserves.

In addition to land allocation questions, land use practices are of continuous concern. How do agricultural and forestry practices affect long-term productivity? For example, an estimated 50% of the soil fibre (humus) has been lost since grasslands were cultivated. Soils adversely affected by salinity are increasing at a rate of about 1% annually. Clear-cutting large areas of forest and along slopes and streams can affect forest hydrology and fish and wildlife populations. How can mined land be reclaimed for other uses? How can wildlands be maintained and yet provide for recreation, agriculture, and industrial development?

Land Use Decisions

Decisions about how to use the land become more difficult as demands for land increase. As we continue to modify the land, choices must be made about how we can best use the land.

At the present time, there is no single agency assigned to oversee land use in the province. Land use planning and management is the responsibility of numerous government agencies and departments. The primary responsibility for administration of land and resources rests with the province under The British North America Act. The federal government administers Indian lands, national parks, PFRA community pastures, some other designated areas, and has jurisdiction over migratory birds and the export of natural resources.

The province has jurisdiction over public lands and forests, minerals, oil, natural gas, most recreational resources, and non-migratory wildlife. Jurisdiction over agriculture, fisheries, and water resources is shared by the provincial and federal governments.

Local government plays an important role in land use in Saskatchewan through authority delegated under The Urban and Rural Municipalities Act. The onus is on the local government to undertake land use planning under The Planning and Development Act through zoning and subdivision control. A further complicating feature of land ownership is the fact that 38% of the land in the province is privately owned, the majority of which lies in the southern settled region of Saskatchewan.

This division of responsibility can result in policies and programs which oppose one another. For example, agricultural policies and programs to clear, drain, and break land for crops and pastures are undertaken at the same time that wildlife programs encourage protection of wetlands and other wildlife habitats. Isolated policies and programs focusing on single land uses are no longer sufficient to deal with the interrelated demands on land.

A comprehensive land use policy is needed to help resolve these issues and potential conflicts over land use. A land use policy should provide a framework for making decisions regarding related land uses. Such a policy should provide direction for land use planning which will ensure a renewable resource base for uses such as food production, wildlife, water, and timber, and ensure that options remain open for the future.

STEPS TOWARDS A LAND USE POLICY

Need for Land Use Policy Identified

During the 1960's, environmental issues such as pollution, flood control, wildlife protection, and food production were widely discussed. In the early 1970's, various groups began to focus on the issue of land use as it was recognized that environmental problems are the result of the way we use the land.

In 1974, the Environmental Advisory Council, which is a group of citizens representing various interest groups, submitted a report entitled *Land Use Policies in Saskatchewan* to the Saskatchewan Environment Minister, the Honorable Neil Byers. This report identified the need for an overall land use policy to co-ordinate land use planning and management in Saskatchewan.

The government, recognizing the need to examine land use policies, proposed that a seminar on land use be held to gain better understanding of the issues and determine the degree of consensus about the need for a comprehensive land use policy.

Land Use Workshop I

The first land use workshop, held in Fort Qu'Appelle in February 1976, was attended by 40 people representing 19 major provincial interest groups. Delegates represented local government, forestry, mining, recreation, agriculture, and environmental organizations. For a list of participating groups see Fact Sheet 1 — Land Use Workshop I.

Workshop I focused on the following topics: a definition of land use; how we use land; need for land use policy guidelines; implementing a policy, and; alternative means to develop a policy. The Workshop delegates agreed on the need for a land use policy and recommended that a second workshop be held following a review by organizations and the government of the results of Workshop I.

Land Use Workshop II

A second workshop was held in April, 1977. The majority of the organizations were represented by the same delegates who attended Workshop I.

Workshop II delegates reached consensus on a number of guidelines for the following land uses: agriculture, minerals, heritage sites, settlements, water, recreation, utilities, forestry, waste disposal, and fish and wildlife. These guidelines are printed in Fact Sheet 2 — Land Use Workshop II.

To further the development of a land use policy, Workshop II delegates recommended that:

- A summary of Workshop II should be printed and made available to interested individuals and organizations.
- A summary of all existing legislation and regulations which relate to land use policy guidelines in Workshop II should be prepared.
- The public involvement process should be broadened to include more individuals and organizations.
- There should be a major educational program on land use to accompany future public involvement efforts.

In September, 1977, the government announced that the four recommendations from Workshop II were accepted. In addition, the land use guidelines agreed to at Workshop II were adopted as an interim land use policy until a comprehensive land use policy is formally in place. The government authorized that the Honorable Neil Byers, Minister of Environment, be responsible for development of a land use policy.

Land Use Policy Committees Formed

Two committees have been formed to co-ordinate the development of a land use policy. A **Land Use Policy Committee** of eight members representing local government, agriculture, wildlife, mining, and environmental interest groups has been formed. This Committee will review and advise on land use policy development activities including public information materials, land use community workshops, and policy alternatives.

The second committee involved is the **Interagency Co-ordinating Committee.** It is comprised of the permanent heads of 12 major government departments and Crown Corporations and will be responsible for land use policy development activities of all government departments and agencies concerned with land use in Saskatchewan. Chairman of both committees is Grant C. Mitchell.

What needs to be done?

The Land Use Policy Committee will undertake a major information and education program on land use and the need for a provincial land use policy. This program will include land use community workshops to be held throughout Saskatchewan early in 1978.

These community workshops will enable individuals and organizations to express viewpoints on the land use guidelines and other land use issues. Public reaction to the guidelines approved by Workshop II delegates and to those guidelines on which consensus was not reached will assist in developing a land use policy.

Following the community workshops, a land use policy will be developed for government consideration under the guidance of the Interagency Co-ordinating Committee and the Land Use Policy Committee. A procedure for implementing and administering a land use policy must also be developed.

Land Use Community Workshops

The development of a comprehensive land use policy is a difficult but necessary task. The diversity of resources and demands upon these resources must be recognized. Plan to attend the community workshop which will be held in your area to express your viewpoint on the land use policy guidelines and to discuss land use issues.

Additional Reading

Fact Sheet 1. **Land Use Workshop I.** Land Use Policy Committee
Fact Sheet 2. **Land Use Workshop II.** Land Use Policy Committee

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FACT SHEET 7

Land Use in Saskatchewan

Land Use Policy Committee

AGRICULTURAL LANDS

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential conflicts relating to land use. As we continue to modify the land, choices must be made as to how we can most wisely use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet focuses on agricultural lands.

The farming sector is the largest single user of land in Saskatchewan, accounting for 65.5 million acres or 46.5% of the total provincial land area of 140.9 million acres.

Not only do Saskatchewan farmers exert a major influence on both the quality and quantity of land use of the province, but many of the land use issues and concerns which exist in Saskatchewan involve agriculture and other land resource interests.

What are the agricultural capabilities of Saskatchewan lands?

Saskatchewan is fortunate in having a large resource of productive farm land. As illustrated in Table 1, Saskatchewan possesses 26% of all the land area in Canada with agricultural capability. Approximately 77.9 million acres or 55% of Saskatchewan's land area is suitable for agriculture. The high proportion of Saskatchewan land suited to agriculture contrasts with the fact that 87% of all the land in Canada is not suitable for agriculture.

Saskatchewan possesses 36% of all the prime farm land in Canada (i.e. Canada Land Inventory Class 1-3) and it is this land which is the basis of the province's substantial grain and oil seed production capacity. With 40 million acres, Saskatchewan ranks first among the provinces in prime farm land area. With nearly 38 million acres, Saskatchewan ranks second only to Alberta in terms of land area suited for forage, pasture, and livestock production. All the land suitable for agriculture in Saskatchewan lies south of latitude 55 degrees north.

There are seven major soil zones in Saskatchewan: brown, dark brown, black, thick black, grey wooded, dark grey wooded, and podzol. These zones form bands across the province, generally running in a northwesterly-southeasterly direction. Saskatchewan soils are the result of the combined effects of natural factors including climate, vegetation, geological material, topography, drainage, and time. Man is also playing a role in the continuing evolution of soil characteristics by the use he makes of the land.

From the short grass prairie in the southwest to the parkland in the northeast, the major soil zones tend to be associated with unique natural vegetative and climatic features. In the course of settlement, farmers have adapted agricultural practices to the unique soil-climatic characteristics of each zone. The process of adaptation has led to a pattern of land use with ranching and wheat being the dominant forms of agriculture in the drier areas of the brown soil zone; wheat, feed grain and oil seed production in the dark brown and parts of the black soil zones; and mixed farming in the thick black and grey wooded soil zones.

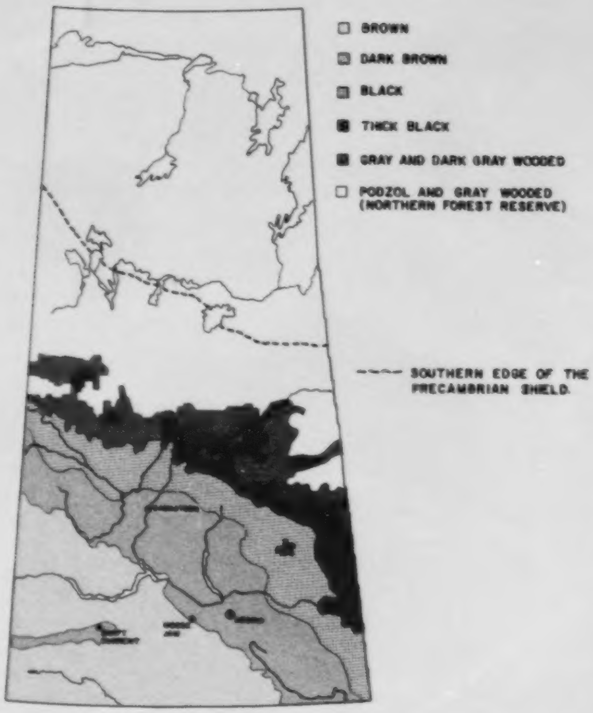
Table 1

LAND CAPABILITY FOR AGRICULTURE

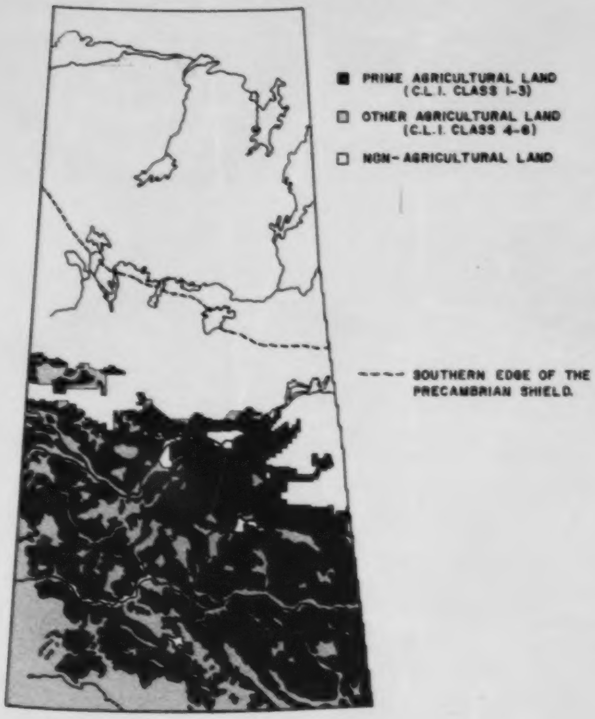
CLI Class	Limitations	Suitable for	Sask.	Canada	As Per Cent in Canada
			thousands of acres		per cent
1	no significant	wide range of crops	2,470	10,245	24
2	minor	fairly wide range of crops	14,513	40,015	36
3	moderate	moderate range of crops	23,277	62,107	37
4	severe	marginal for crops	9,348	61,629	15
5	very severe	hay or improved pasture only	21,059	84,890	25
6	non-arable	native pasture only	7,215	45,528	16
	Total area with agricultural suitability		77,882	304,414	26
	Total land area		140,916	2,278,417	6
	Land area with agricultural suitability as per cent of total land area		55	13	....

Source: Canada Land Inventory, Land Directorate, Environment Canada, 1977.

AGRICULTURAL SOIL ZONES


☐ BROWN
▨ DARK BROWN
▨ BLACK
■ THICK BLACK
■ GRAY AND DARK GRAY WOODED
☐ PODZOL AND GRAY WOODED (NORTHERN FOREST RESERVE)
SOUTHERN EDGE OF THE PRECAMBRIAN SHIELD

SOIL CAPABILITY FOR AGRICULTURE


■ PRIME AGRICULTURAL LAND (C.L.I. CLASS 1-3)
☐ OTHER AGRICULTURAL LAND (C.L.I. CLASS 4-6)
☐ NON-AGRICULTURAL LAND
SOUTHERN EDGE OF THE PRECAMBRIAN SHIELD

What are the agricultural uses of our land?

Of the 77.9 million acres with agricultural suitability in Saskatchewan, 65.5 million acres are in agricultural uses (Table 2). The balance of 12.4 million acres is utilized for forest, recreation, or urban purposes. Forest and recreation uses are located mainly on the more northerly lands with agricultural capability, while the 286,000 acres in urban uses are dispersed throughout the southern half of the province with Regina and Saskatoon being the major population centres.

While most of the lands in agricultural use are devoted to commercial farming operations, approximately 195,000 acres are classed as non-commercial agricultural holdings with sales of less than $1,200 per year.

Of the land in commercial farming operations, approximately 46.1 million acres were under cultivation in 1976, with 17.7 million acres in wheat production, 4.9 million acres in feed grains (oats, barley, mixed grains, rye, and corn) and one million acres in oil seeds (flax, rapeseed, and sunflowers). Only 35,000 acres were devoted to other field crops (peas, beans, lentils, buckwheat, and other special crops) and 4,000 acres to horticultural crops including potatoes. The remaining cultivated land consisted of 17.7 million acres in summerfallow, 2.5 million acres in forage crops (tame hay, oats for fodder, corn silage, and other fodder crops), and 2.2 million acres in improved pasture.

Uncultivated land devoted to pasture and grazing account for 13.5 million acres, while woodland and land unproductive for farming included in commercial farms account for one million and four million acres respectively. About 567,000 acres are occupied by farm yards.

Of the foregoing lands, approximately 15.8 million acres support the cattle industry. Approximately 631,000 acres are leased from the Crown to co-operative grazing associations, 1.8 million acres are included in PFRA pastures, 761,000 acres in provincial community pastures, and 30,000 acres in pastures operated by rural municipalities. A further 4.6 million acres are utilized for pasture under hay, grazing, or cultivation leases to individuals.

Approximately 7.8 million acres of public land are utilized for pasture purposes. A further 7.9 million acres of privately owned land are utilized for pasture and grazing. About 2.2 million acres or 14% of the total area of pasture and grazing land has been improved through clearing, breaking, or seeding activities.

What is the economic significance of agriculture in Saskatchewan?

Based on the figures for 1976, farm production in Saskatchewan generates approximately 22% of Saskatchewan's personal income and accounts for almost 52% of the value added in goods producing industries. Almost 25% of the province's labour force is directly employed in agriculture, and many others are employed in activities which depend on agriculture.

Almost 48% of Saskatchewan's gross farm income is derived from wheat production and Saskatchewan accounts for 63% of the income generated by wheat in Canada (see Table 3).

About 17% of Saskatchewan's gross farm income is generated from sales of livestock and poultry products and the balance is associated with income generated from field crops such as feed grains and oil seeds. While the Saskatchewan portion of Canadian farm income generated by field crops is relatively high, Saskatchewan's portion of the Canadian farm income generated by poultry and livestock is low. About 17% of the gross income from the sale of cattle and calves in Canada is generated in Saskatchewan.

In total, Saskatchewan accounts for 24% of the Canadian gross farm income and 18% of farm operating and depreciation costs, and generates 35% of Canada's net farm income.

Table 3

CASH RECEIPTS AND NET FARM INCOME SASKATCHEWAN, 1976

	Saskatchewan		Canada
Item	per cent	$000,000	per cent
Wheat	47.9	1,303	63
Oats	0.8	23	28
Barley	6.1	167	33
Net cash advances and deferrals	5.6	151	73
Rye	0.4	12	43
Flax seed	1.0	26	33
Rapeseed	4.0	110	49
Other Crops	0.7	20	3
Horticultural Crops	0.1	2	0
Cattle and Calves	12.1	329	17
Hogs	2.1	56	7
Dairy Products	1.2	32	2
Poultry and Eggs	1.1	30	4
Other Livestock	0.3	9	9
Direct Government Subsidies	.6	16	4
Income in Kind	5.8	159	15
Inventory Charges	10.2	276	92
Total Farm Income	100.0	2,721	24
Operating and Depreciation Expenses	47.7	1,297	18
Total Net Farm Income	52.3	1,424	35

Source: Farm Cash Receipts and Farm Net Income. Statistics Canada, 1976.

Table 2

AGRICULTURAL LAND USE IN SASKATCHEWAN 1976

Land Use	Area (thousands of acres)
Lands with agricultural capability (C.L.I. Class 1-6)	77,882
Land in agricultural use	65,511
Non-commercial agricultural holdings	195
Commercial agricultural holdings	65,316
Summerfallow	17,734
Wheat	17,691
Feed Grain	4,930
Oil Seeds	979
Other field crops	34
Horticultural Crops	4
Forage Crops	2,526
Improved Pasture	2,226
Unimproved Pasture	13,543
Farmsteads	567
Woodland	1,000
Other unimproved land in farms (sloughs, brush, marshes, etc.)	4,076
Land with agricultural suitability in non-agricultural uses	12,371
Urban uses	286
Forest and Recreation	12,085

Sources: Census of Agriculture, Statistics Canada, Departments of Municipal Affairs, Environment and Agriculture, Province of Saskatchewan.

What land use problems are associated with agriculture?

The land use problems associated with agriculture include problems relating to tenure, agricultural practices, the marketing system, and conflicts with other land use interests.

Many of these problems can be traced back to the price mechanism, which treats land as a commodity instead of the limited resource that it is. The increase in population over the years, combined with a limited amount of land, has resulted in increasing demands for the use of the land, and a shift in emphasis from the rights of the private landowner to that of society as a whole, and from present needs to those of future generations. Land is not only private property; it is also a resource upon which we are dependent. Over 38% of the land in Saskatchewan is privately owned; this is 24% of all land in Canada in private ownership.

Land Tenure

Issues involving land tenure include farm size, transfer rights, and non-resident and foreign ownership.

Farm size has become an issue with the increasing tendency for farm units to become larger, and concerns have been expressed about placing limits on farm size. The number of farms in the province in 1941, 1971 and the projections (based on present trends) to 2001, are 138,472; 76,970 and 39,771 respectively. The average farm size for the same three years is (in acres) 432; 845 and 1,634.

Many people consider this increase in farm size to be undesirable. It reduces the "rural option" for people in choosing where they will live. Large units permit fewer people to live on the land, and lead to a decline in smaller communities.

Large farms also tend to be monoculture operations, and are less labour intensive than are smaller, more diversified units, thereby contributing to the problem of unemployment. In terms of output per acre, large monoculture operations may also be less productive than smaller units, sometimes several times so, especially when replacing more diversified operations.

On the other hand, others state that a farmer needs to accumulate larger units to enable his sons to farm, and that to control farm size is to limit the rights of the individual.

Factors that encourage large farms include: lower overhead and operating costs per acre where large machinery can be used; federal tax legislation that encourages purchase of such equipment; and attractive off the farm employment opportunities for young people, especially in view of the large capital investments required and the uncertain returns. Young farmers do not have access to the capital needed to compete with large operators for available land; land investments have paid good returns in the past, and they expect it to do so into the future.

Transfer of land from one generation to the next has been complicated by the capital costs involved, as our present financing system requires that each generation shoulder this burden as it buys from the previous one. In Saskatchewan, the Land Bank Commission has been set up to deal with this problem, and to assist the small to medium sized farm operation. Through the purchase of land, the Land Bank is able to facilitate the transfer of land from one generation to the next by providing capital for the parents' retirement while in turn assuring that the land remains within the family's control through long-term secure leasing arrangements. Since 1971, the Land Bank has purchased over 750,000 acres, or just over 1% of the agricultural land in the province.

Foreign, non-resident, and non-farm ownership of farm land have also been cited as problems. Corporate interests and foreign investors have in the past secured large tracts of land in the province, particularly along the U.S. border and near the larger cities. Non-residents own almost two million acres of Saskatchewan farm land.

Non-resident and non-farmer ownership limits the amount of land available for Saskatchewan farmers, can raise prices above those justified by agricultural production, and disrupts the structure of rural communities. Many people feel that the interests of non-residents and non-farm owners are not the same as the best interests of Saskatchewan's farmers.

Some people have stated that it does not matter who owns the land so long as the renter has some guarantee regarding the length and rates of the lease. Others feel there should be no restrictions on potential purchasers of farm land, as land is often the farmer's pension.

The Farm Ownership Act limits the amount of land that can be held by a non-agricultural corporation to 160 acres, and non-residents to land assessed at $15,000.00. Amendments to the Act have recently been introduced that will limit non-resident ownership to 160 acres, and will require the filing of more detailed information prior to purchases by non-residents.

Agricultural Practices

Agricultural practices affect soil productivity, change the environment, and affect neighbouring and other people. Some practices have resulted in significant losses of soil fibre (humus), structural deterioration of the soil, substantial losses of soil nitrogen, and serious increases in soil salinity. Others, such as drainage, have caused problems with neighbours, or downstream flooding, and pollution of water used for recreation.

Many of these practices can be traced back to the economic pressures on the farmer, which demand that he be more concerned with immediate results than long-term effects. While some of these practices have served useful purposes from the farmers perspective, new research and information has revealed the harmful effects and demonstrated that there are less harmful options.

Agricultural practices that have been identified as contributing to these problems are summerfallowing, drainage of wetlands, over-reliance on chemical fertilizers and pest controls, stubble and waste area burning, cultivation of marginal soils, and a lack of sound crop rotations.

Summerfallowing, especially when practiced excessively, has been identified as a major causative agent in many of these problems. Although still considered to be the most important practice in use for increasing moisture reserves and controlling weeds, it has been singled out as causing soil erosion, salinity, and humus and nitrogen losses from the soil.

Fibre decomposition takes place four to five times as fast on summerfallow as it does in crop land. These fibre losses cause a structural deterioration of the soil, resulting in increased wind and water erosion, a decrease of the infiltration of rainfall into the soil, and adversely affect germination and oxygen exchange. Soil nitrogen leaches out below the root zone, and soil salinity increases. It is estimated that 50% of the soil fibre has been lost since the grasslands were broken, and that the amount of soil nitrogen leached out of the soil is worth $88 million annually. Since the 1950's, the amount of soil adversely affected by salinity has doubled in the province, and it is increasing at about 1% annually. Only 10% of the cultivated land in the province is considered to be in no risk of being affected by salinity.

Extension of the rotation period and continuous cropping where feasible have been suggested as alternatives in some areas, but additional research into the problem is needed.

The **drainage** of wetlands, both licensed and unlicensed, has increased dramatically in recent years. Marshes, sloughs, and pot holes reduce productive acreage, and result in increased operating costs. They are also inconvenient to farm around, especially with the larger equipment in use today. However, drainage can cause problems for neighbours and downstream users, changes in ground water supplies, increases in soil salinity, erosion, and eliminate critical wildlife habitat.

An interagency Drainage and Flood Control Study is presently documenting drainage and flooding problems throughout the province, reviewing existing legislation, and reviewing proposals for changes in drainage and flood control policies.

An over-reliance on **chemical fertilizers, herbicides,** and **pesticides** can be a hazard to the farmer and others, cause serious environmental pollution, and result in long-term declines in productivity. Little is known of the function of many soil organisms, or the effects of agricultural chemicals on them. All should be used only when needed, and not used to replace good cultural practices.

Stubble burning and the **burning of "waste" areas** contribute to atmospheric pollution and destroy wildlife habitat. Although short-term benefits may result, it contributes to soil deterioration and long-term declines in productivity.

The **cultivation of marginal lands,** where soil or climate are not suitable for cereal production, has taken place. Such areas may be better left for other purposes, such as livestock, forage, wildlife, or multi-purpose uses. Clearing and/or breaking these areas can result in rapid erosion, and leave the land less productive than it was originally. Suitability of the land for cultivation should be determined beforehand.

Marketing

Uncertain markets for farm products associated with wide fluctuations in prices paid for them, and continually rising operating costs can encourage unsound land uses by forcing a farmer to think on a short-term rather than a long-term basis. For example, although the best long-term use of a piece of land may be for livestock production, it takes several years to build up a profitable herd, and prices may have dropped by that time. Market uncertainty and instability also contribute to increasing farm size and the off-farm migration. Better marketing and stabilizing arrangements could contribute to the implementation of farming practices better suited to the long-term conservation of soil and soil productivity.

What land use conflicts occur between agriculture and other land users?

Most land in the southern half of Saskatchewan has agricultural capability and other uses must compete with agriculture for the land.

Wildlife interests are in frequent conflict with agriculture as lands brought into agricultural production are usually taken out of wildlife production. Over one-half million acres of land have been improved for agriculture since 1971 by clearing bush, breaking and seeding grasslands for forage production, and draining marshes and pot holes. Some agricultural practices, such as burning waste areas, destroy additional wildlife habitat. Agricultural chemicals and livestock feedlots can cause water pollution and affect fish and water birds.

Although it has been pointed out that some species such as the white-tailed deer and the red fox are more numerous since the land was first broken or cleared, many more species have disappeared or declined, and the net loss of wildlife is considerable.

On the other hand, lands designated for wildlife production, such as Wildlife Development Fund lands and bird sanctuaries, take land from agricultural production. Wildlife, especially waterfowl, cause much damage to farm crops, and can compete with livestock for available forage.

Mineral extraction can also compete with agriculture for land. Although the amount of land involved in mineral extraction is usually insignificant, the strip mining of the lignite coal reserves in southern Saskatchewan can affect large areas of agricultural land. The strip mine at Estevan already covers 10,000 acres, and will continue to use about 300 acres per year. The Poplar River Power Project will strip mine about 160 acres of farm land per year per unit during its lifetime. Eventual reclamation of much of this land for agriculture may be possible.

Recreational uses compete for land with agriculture in several ways. Recreational wildlife users demand lands for wildlife production. Park development, such as the proposed Grasslands National Park in the Killdeer-Val Marie area demand lands in agricultural use. Snowmobile and other outdoor recreational users can cause considerable damage to farm property, and demand access to private and leased lands for their activities.

Utilities, such as hydroelectric reservoirs, roads, transmission lines, and pipelines, demand land that is or could be in agricultural use. For example, approximately 1.12 million acres or 0.7% of Saskatchewan's land is allocated to roads or road right-of-way.

Urban and **industrial** uses including rural subdivisions for country residences and hobby farms are competing for agricultural lands. In many cases, such as in the Regina area, these lands are prime agricultural land. In the Saskatoon area alone, approximately 100 sections of land have been subdivided, and the rate of this activity has increased dramatically in the past few years. This land is often taken out of agricultural production or poorly farmed, and leads to other problems, such as conflicts with nearby farmers involved in livestock operations.

About 300,000 acres are now designated for urban uses (cities, towns, and villages), and it is calculated that each increase of 1000 in population will take an additional 300-1000 acres of land for urban development. A number of centres are presently proposing to annex additional farm land for urban use.

Guidelines for Use of Agricultural Lands

The following guidelines were approved by delegates attending Land Use Workshop II.

Philosophy:

1. Recognize and maintain aesthetic features of agricultural land.
2. Decision-making affecting agricultural land use ought to reflect a balance between environmental, social, and economic considerations.
3. Food production to feed a hungry world is the moral responsibility of the world community which directly relates to land use.
4. Recognize that the nature of the farm produce marketing systems has a direct influence on land use policy.
5. Provide a suitable system of land tenure — provide a process for establishing new farmers.

Objectives:

1. Obtain optimum production in the long-term from land designated for agricultural use.
   - preserve prime farm land for agricultural use.
   - regulate the allocation of agricultural land for other uses.
   - provide opportunities for rural living and recreational areas on a planned basis through zoning with appropriate property tax changes.
   - provide information on rights of property owners for various classes of land use.
2. Encourage development of integrated land use plans for agricultural lands, considering the potential for additional uses at various times (e.g. recreation/hunting/wildlife/etc.). This should especially apply to CLI classes 4, 5, 6 and 7.
   - provide information on alternative agricultural and other uses of land.
   - provide a system to compensate private owners where they provide services that benefit other resource users (e.g. hunting) and where a demonstrable cost is evident.
   - crown land leases should be specific as to use and time of use.
3. Encourage retention and replacement of protective watershed vegetation.
4. Crown lands should be regulated to encourage the retention of native vegetation.
5. Retain the family farm and viable rural communities.
   - limit foreign ownership of land (existing policy not restrictive enough).
6. Emphasize programs and practices which encourage good husbandry and soil conservation.
   - encourage field and roadside shelter belts.
7. Provide a system for ensuring economic returns to prevent a farmer being forced into unsound environmental and land use practices.

In addition, the following guidelines were tabled at the final plenary session on guidelines, but no attempt was made to reach consensus.

1. To maintain and conserve the agricultural productive base both in size and fertility.
2. Permit "land tenure" arrangement which provides for:
   (a) private ownership by individual farmer;
   (b) public ownership for leasing; and
   (c) other types of private ownership with publicly regulated leasing arrangement.

Additional Reading

Agricultural Institute of Canada. 1975. *Farmland: Canada's Threatened Natural Resource.* The Agrologist. Vol. 4:4.

Beaubien, C. and R. Tabacnik. 1977. *Study on Population, Technology and Resources.* Perceptions 4, People and Agricultural Land. Science Council of Canada, Ottawa.

Canadian Imperial Bank of Commerce. 1977. *Canada's Food Land Resource.* Commercial letter. Vol. 3. Toronto.

Environment Canada. 1976. *Land Capability for Agriculture.* A Preliminary Report for the Canada Land Inventory, Lands Directorate.

Saskatchewan Association of Rural Municipalities. 1976. *SARM Land Use Conference Proceedings.* The Rural Councillor, Vol. 11:9. Regina.

Saskatchewan Department of the Environment. 1977. *Land Use in Saskatchewan.* Policy, Planning and Research Branch.

University of Saskatchewan. 1975. *Guide to Farm Practice in Saskatchewan.* Extension Division, Saskatoon.

University of Saskatchewan. 1970. *Inventory of Saskatchewan Soils and Their Capability for Agricultural Use.* Institute of Pedology, Saskatoon.

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FACT SHEET 8

Land Use in Saskatchewan

Land Use Policy Committee

FISH AND WILDLIFE

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential conflicts relating to land use. As we continue to modify the land, choices must be made as to how we can most wisely use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet focuses on our fish and wildlife resources.

What are our fish and wildlife resources?

Our fish and wildlife are renewable resources made up of all free-living animals present in Saskatchewan. Included are not only the familiar fish, birds, and mammals, but also the reptiles, amphibians, and invertebrate animals such as insects, spiders and crustaceans.

Sixty-seven species of **fish** are found in Saskatchewan. Most of these are less than 6 inches in length and are commonly referred to as "minnows". About 7 other species are considered to be commercial species and 15 are fished for sport.

Mammals are represented by 78 species that are, or have been, found in Saskatchewan. More than 20 species are trapped for fur and 8 are game animals. Rodents are the most numerous group with some 30 species.

Some 245 of the 350 species of **birds** found in Saskatchewan breed here. Most of these are "songbirds", which consume large quantities of insects and weed seeds. Over 20 species of waterfowl and 6 species of upland gamebirds are hunted for sport and meat. All provide countless hours of enjoyment for people engaged in outdoor activities.

Amphibians are represented by 7 species (3 frogs, 3 toads, and 1 salamander) and **reptiles** by 12 species (9 snakes, 2 turtles, and 1 lizard). Most are beneficial, as they eat insects and rodents, or provide food for larger birds and animals.

Many thousands of species of **invertebrate animals** occur in Saskatchewan including insects, spiders, and crustaceans. Some are serious pests, such as the grasshopper and wire worm, while others are very valuable, such as the pollinating insects and predator species like spiders and dragonflies. One species, the brine shrimp, is harvested commercially.

Who administers our fish and wildlife resource?

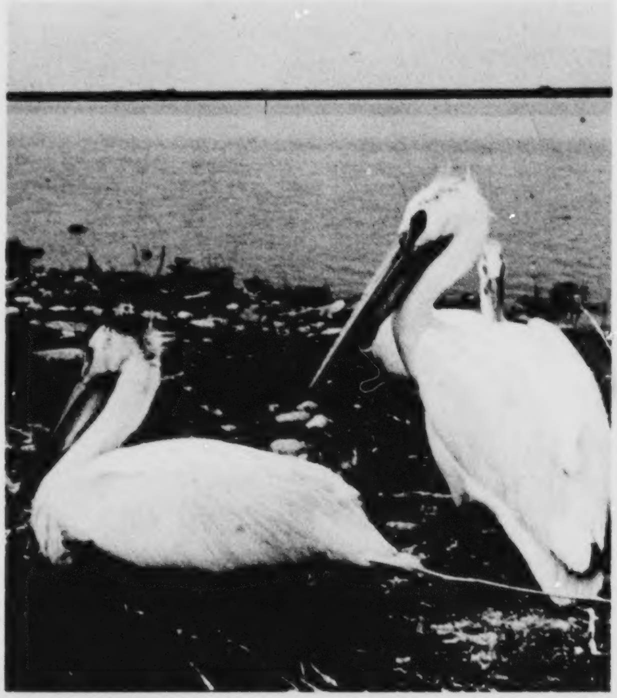
The primary responsibility for the administration of our fish and wildlife resource rests with the province under the 1930 Natural Resources Transfer Agreement. However, the federal government has jurisdiction over migratory birds and the export of fish and wildlife, although the export permits are issued by the province.

Jurisdiction over fish and wildlife in some cases, such as fisheries and endangered species, is shared by the provincial and federal governments.

The provincial Department of Tourism and Renewable Resources and the Department of Northern Saskatchewan are responsible for the management of non-migratory wildlife. Invertebrate animals are not included in the mandate of either government, except for the crustaceans which are a responsibility of the province.

Provincial legislation pertaining to fish and wildlife includes The Game Act, The Fur Act, The Fisheries Act, The Department of Tourism and Renewable Resources Act, and The Northern Saskatchewan Conservation Board Act. This legislation provides for the conservation and preservation of fish and wildlife, enables research, and sets regulations regarding harvesting.

Federal legislation includes The Fisheries Act, The Migratory Birds Convention Act, The Canada Wildlife Act, and The Game Export Act.



What other organizations are concerned with fish and wildlife?

Many organizations in Saskatchewan are concerned with environmental issues, but three in particular stand out for their active involvement in fish and wildlife matters.

Ducks Unlimited is a non-profit organization involved in producing waterfowl by creating and restoring prime breeding habitat in Canada. To date, some 400 projects have been constructed in the province involving about 730,000 acres. Ducks Unlimited does not purchase land, and projects are undertaken on private land with an agreement from the land owner and on crown lands in co-operation with government agencies.

The **Saskatchewan Wildlife Federation,** formerly the Fish and Game League, is a non-profit sportsman's organization of more than 25,000 members. Its main function is to influence the government in matters relating to fish and wildlife management. Other programs include the Game Farm at Saskatoon, pheasant stocking and goose nesting projects, hunter-landowner co-operation and outdoor education, and an "Acres for Wildlife" program whereby farmers dedicate a portion of their land for wildlife production; at present, some 20,000 acres are committed to this program.

The **Saskatchewan Natural History Society** is another non-profit organization of about 2,500 members. They are conservation oriented, and publish a quarterly journal, the *Blue Jay*, which is a major source of information on Saskatchewan wildlife and plants. They also pressure the government on environmental, conservation, and wildlife issues.

What lands are designated for fish and wildlife?

There are four types of designated wildlife land in Saskatchewan: Federal bird sanctuaries, wildlife management units, game preserves, and wildlife refuges.

Fifteen **federal bird sanctuaries** occupying 156,000 acres in the province are managed by the Canadian Wildlife Service. Federal bird sanctuaries are mainly water areas established to protect migratory birds on important staging areas. Other land uses, such as controlled grazing, haying, and recreational use, are permitted where it does not conflict with the initial purpose of a sanctuary.

The remaining three types are designated and managed by the Department of Tourism and Renewable Resources.

Wildlife management units, first established in 1970, occupy over two million acres of land. These are established to facilitate better wildlife management, which consists mainly of setting hunting restrictions for these units based on local annual production. Most of this land is in PFRA community pasture, and the Department of Tourism and Renewable Resources has no control over land use. Consequently, their value to wildlife varies from poor to excellent. Generally, private lands are not designated as wildlife management units.

Some 27 **game preserves** occupy about 88,470 acres of land in Saskatchewan. Many more existed prior to 1970, but these have since been re-designated as wildlife management units or wildlife refuges. Most remaining game preserves are located on private lands, and the government has no control over land use. As a result many do not serve their stated purpose of protecting and propogating wildlife.

There are 14 **wildlife refuges** in the province containing about 6,000 acres. Wildlife refuges, first established in 1970 to replace game preserves, are managed to protect important wildlife habitat, such as prairie dog colonies, and areas of exceptional wildlife value. Land use on all but one wildlife refuge is controlled by the Department of Tourism and Renewable Resources. Most wildlife refuges are less than 200 acres in size and many are inaccessible. Hunting is banned in these areas.

In addition to these designated lands, some 53,000 acres suitable for wildlife have been purchased through the **Wildlife Development Fund,** also administered by the Department of Tourism and Renewable Resources. Most of these lands have been purchased to counteract the destruction of upland habitat by land clearing operations. Hunting is permitted on these lands, but agricultural uses are limited to those that will not affect the wildlife values of the land. Monies for the fund come mainly from an impost on hunting licences.

About 20,000 acres have also been designated for 28 permanent lure crops in areas of chronic waterfowl depredation.

What uses are made of and how important is our fish and wildlife resource?

The total value of our fish and wildlife resource is impossible to calculate. The economics of some of the uses have been investigated, but many of the values are not easily defined. The value of our fish, fur-bearing and game animals is recognized by many people, but the services provided by animals such as insect and seed-eating birds and pollinating insects are often not appreciated.

Fishing provides food, income, and recreation for many Saskatchewan people, and it has been estimated that 20% of Saskatchewan residents engage in sport-fishing annually. In 1976, sports-fishing licences were issued to 157,000 residents and 20,330 non-residents anglers resulting in thousands of days of recreation and many dollars to the economy. During the same period, over 12 million pounds of fish were harvested from 193 lakes for commercial sale (10.4 million pounds), domestic and native use (1.2 million pounds) and by fur-ranching operators (0.4 million pounds). The market value of the commercial catch was 4.5 million dollars.

Trapping licenses were issued to 11,133 trappers in 1975-76 with over 8,500 of these issued in the southern, settled part of the province. Market value of the fur harvest for that year was 4.4 million dollars. Muskrats made up the largest percentage of the harvest with the almost 50,000 pelts taken valued at 1.3 million dollars. Red Fox and Coyotes contributed another 1.7 million dollars of this total.

One of the more important uses made of the fish and wildlife resources is **hunting.** Saskatchewan is the largest single producer of waterfowl on the continent with almost 114,000 square miles of productive waterfowl habitat. One-third of all ducks on the continent breed within our borders. Approximately 15% of Saskatchewan residents hunt game birds, and about 60,000 game bird licenses are sold annually, providing in excess of 200,000 hunter-days of recreation. About 900,000 birds are harvested annually with waterfowl making up 720,000 of these. Upland games birds account for the rest, along with some 3,000 Sandhill Cranes.

About 80,000 big game licenses are sold annually. Some 37,000 animals are harveted each year with White-tailed deer contributing about 30,000. Big game hunting provides 230,000 hunter-days of recreation annually.

It was calculated that resident big game hunters spent over 9 million dollars in 1973 with non-residents contributing another $566,000 in associated economic benefits in 1974. An estimated seven million dollars was derived from game bird hunting by Saskatchewan residents annually in the early 1970's.

The **non-consumptive** values and uses of our fish and wildlife resources (e.g. bird watching and nature photography) are much more difficult to assess, but are much greater than the combined consumptive uses (hunting, trapping, fishing). A study done in the early 1970's for the Canadian Wildlife Service determined that over 50% of Saskatchewan's adult population considered birds to be an integral part of their outdoor recreational experience, and placed a total annual social value on our bird resource alone at 222 million dollars.

Are there any endangered species in Saskatchewan?

Although no official list of endangered species has been prepared for Saskatchewan, several species and subspecies are generally considered to be endangered.

Two snakes, the Eastern Yellow-bellied Racer and the Plains Hog-nosed Snake, are found in our southern grasslands. Little is known about either species in Saskatchewan, but both are considered endangered in Canada.

Two mammals, the Kit Fox and the Black-footed Ferret, may still be found in the southern grasslands, but it is possible that both are now extinct in Canada. The Black-tailed Prairie Dog is still common south of the border, but occurs in Canada only along the Frenchman River in extreme southern Saskatchewan.

Several of our breeding birds are considered endangered. The Greater Prairie Chicken apparently still exists in the province, but almost nothing is known about it here. Some authorities also consider the Bald Eagle and the Prairie Falcon to be endangered species, and the Greater Sandhill Crane and the Richardson's Merlin to be endangered subspecies. The Whooping Crane and Peregine Falcon occur as transients.

What land use conflicts exist concerning our fish and wildlife resources?

As all land use practices result in changes in the fish and wildlife populations present, conflicts continually arise between fish and wildlife user groups and other land use interests. Such conflicts are not restricted to user versus non-user groups, but also exist between user groups themselves. Many of the people involved in these conflicts have interests on both sides (e.g. the hunter-farmer or the engineer-fisherman), so that there is a broad based interest in resolving these conflicts.

Although fish and wildlife user groups tend to be aligned in their demands, realizing that habitat retention is their mutual basic goal, conflicts among them do arise. Commercial fishing interests may conflict with sports fishing interests; hunters and trappers may conflict with naturalists' interests, and wetland development for waterfowl, such as is occurring in the Cumberland marshes, may conflict with big game interests.

The greatest area of conflict is between **agricultural developments** and fish and wildlife interests. The drainage of wetlands results in a loss of wildlife habitat, especially for waterfowl, as well as contributing to changes in downstream water regimes, which may result in further changes to fish and wildlife populations. The clearing of bush and the breaking of grasslands for crop production or pasture improvement takes large areas of wildlife habitat out of production. Questionable farming practices, including heavy fertilization, summerfallowing, and the burning of stubble and "waste" areas contribute to habitat loss or degradation for wildlife purposes. Access to both private and public lands designated for agricultural uses is often cited as a problem by wildlife user groups.

On the other hand, damages are caused to the property and crops of farmers by wildlife and wildlife users. Waterfowl damage to crops is a serious problem in many areas of the province, and over $800,000 was spent on waterfowl—crop damage programs in 1976, a year in which the problem was not considered severe.

Forestry practices can also result in changes in wildlife and fish populations. Clear-cutting may conflict with the interests of hunters, trappers, and the needs of many species of birds and animals. Resulting changes in forest hydrology can have adverse effects on local fisheries.

Mineral extraction can result in land being taken out of wildlife production, and exploration activities can disturb sensitive species. Downstream water quality may be changed resulting in a change in fish populations.

The use of lands for **recreation**, and the designation of lands for that purpose, can conflict with wildlife needs in some areas.

Urban settlements can result in losses of productive wildlife habitat lands, and the increase in activity in the district can adversely affect some wildlife populations. Wastes generated are often a cause for the degradation of downstream water quality and result in changes in fish populations.

Utilities such as pipelines, hydroelectric developments and transmission lines, roads, and railways can also affect fish and wildlife populations through disturbance and removal of habitat.

Any change in land use will result in changes in wildlife populations. These changes are beneficial or harmful depending upon the viewpoint of the different users. For example, a dam may remove land which produces terrestrial wildlife but result in the creation of a fishery, and strip mining may destroy the habitat of grassland birds but create habitat for deer. Most of these changes can be predicted and should be evaluated prior to the allocation of land to a particular use.

A greater appreciation of the values of this resource, along with an increased awareness of the needs of wildlife and wildlife user-groups and the effects of any land use decisions on them, should aid in finding satisfactory solutions to many of these conflicts. A comprehensive land use policy must consider these needs, and result in wise decisions that will ensure that these needs are met.

Guidelines for Fish and Wildlife

The following guidelines were approved by delegates attending Land Use Workshop II.

Philosophy:

1. Maintain a balance between sport, commercial and domestic fishing based on sound resource management principles.
2. Provide for an equitable distribution of opportunities for citizens to enjoy fish and wildlife resources.
3. Minimize the degree of conflict between fish and wildlife interests and other land uses, with all recreation users bearing a substantial portion of the costs.

Objectives:

1. Develop management programs which will be designed to provide maximum wildlife production from lands designated for wildlife.
    - — maintain accurate inventories of wildlife resources and of wildlife habitat.
    - — ensure hunting privileges are such that wildlife stocks are not depleted.
    - — provide a system to compensate farmers for wildlife depredation on prime agricultural land (through licence fees or through the public purse).
2. Protect endangered species and their habitats.
    - — eliminate the discharge of poisonous wastes into watercourses.
3. Protect sensitive areas such as spawning and breeding grounds.
    - — create public awareness of the resource and the natural balance on nature.
    - — encourage landowners in, and provide financial support for the preservation of wildlife habitat (habitat subject to classification for wildlife values).
4. Develop an interdisciplinary approach to fisheries management to maximize social, recreational and economic benefits from such resources on a sustained yield basis.

In addition, the following guideline was introduced at the final session on which no attempt was made to reach concensus.

1. There is a need to define "semi-permanent" water bodies prior to identifying the need to preserve.

Additional Reading

Banfield, A. W. F. 1974. *Mammals of Canada.* National Museum of Canada. Univerity of Toronto Press, Toronto.

Richards, J. H. and K. I. Fung (Editors). 1969 *Atlas of Saskatchewan.* University of Saskatchewan, Saskatoon.

Saskatchewan Department of Natural Resources. *Resource Reader.* Regina.

Salt, W. R. and J. R. Salt. 1976. *The Birds of Alberta.* Hurtig Publishers, Edmonton. Includes range maps for Saskatchewan and Manitoba.

Saskatchewan Department of the Environment. 1976. *Distribution and Population Status of Saskatchewan Amphibians and Reptiles.* Final Report. Available on loan from Saskatchewan Department of the Environment.

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FACT SHEET 9

Land Use in Saskatchewan

Land Use Policy Committee

RECREATION LANDS

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential land use conflicts. As we continue to modify the land, choices must be made about how we can most wisely use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet presents information about lands that are used for outdoor recreation.

What lands are used for outdoor recreation?

Parks and other sites that have been designated for recreational use are located in both rural and urban settings in Saskatchewan. In addition to these designated recreation lands, a variety of recreational pursuits are carried out on privately owned and Crown lands not designated for that purpose. Examples of recreational activities carried out on lands not specifically designated for recreation are hunting, fishing, cross-country skiing, and snowmobiling. Other sites, such as ski slopes, golf courses, and equestrian areas, have been developed for outdoor recreation on a commercial basis by private interests.

Lands designated primarily for outdoor recreation comprise our "parks system," and include national, provincial, and regional parks, designated recreation sites, and urban parks. These areas (excluding urban parks) contain about 1.3 million acres, or about 0.8% of the total provincial area.

Other designated lands are also used for outdoor recreation, although that is not their primary purpose. Examples are provincial forests, protected areas, wildlife development fund lands, and historic parks.

National Parks —Prince Albert National Park, the only national park in the province, is located in the southern boreal forest, and contains about 962,000 acres of forest and lake.

A second national park is presently being negotiated in the southern grasslands between Val Marie and Kildeer. If established, this park will contain over 500,000 acres of grasslands.

Provincial Parks —The 17 provincial parks are scattered throughout the southern two-thirds of the province. They contain about 1.2 million acres, and range in size from Katepwa Point Provincial Park (19 acres) to Meadow Lake Provincial Park (387,872 acres).

Regional Parks —Almost 100 regional parks covering a total of some 16,000 acres are distributed throughout the settled half of the province. These parks are intended to serve regional needs.

Recreation Sites —About 80 recreation sites have been designated. These are small areas, usually less than 100 acres in size. About one-third of the sites are less than 10 acres. Many are highway picnic grounds or campgrounds. Recreation sites comprise about 40,000 acres. Over half of this land area (26,000 acres) is a single provincial forest that has also been designated as a recreation site.

Urban Parks —Most communities contain parks within their boundaries to serve residents of the community. For example, in addition to the numerous smaller parks in Regina, Wascana Centre contains over 300 acres. Golf courses, playgrounds, and "green spaces" are also used for outdoor recreation.

How are recreational lands administered?

National parks are administered by the federal government through Parks Canada, a branch of the Department of Indian Affairs and Northern Development. *The National Parks Act* enables the Minister responsible to acquire lands for national parks by purchase, expropriation, or other means, and to administer these areas.

Provincial parks, regional parks, and recreation sites are administered by the province through the Department of Tourism and Renewable Resources in the south and the Department of Northern Saskatchewan in the north. Provincial lands may be set aside for parks by the Lt. Governor in Council under *The Provincial Lands Act. The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act* allows for the establishment of parks, protected areas, recreation sites, and the addition of lands to these areas. Under this Act, parks are described and regulations are made for their use and management. *The Regional Parks Act* provides for the establishment of regional parks and regional park authorities, and allows for agreements between the Minister and the park authority regarding the administration and operation of the park. *The Park Advisory Council Act* provides for the appointment of individuals to a park advisory council to study and advise the Minister regarding the needs for, and establishment and operation of parks in the province. *The Department of Tourism and Renewable Resources Act* charges this department with the promotion and development of parks and tourism in the province.

Urban Parks are a responsibility of the Department of Municipal Affairs and are administered by local civic governments. The authority for establishing and maintaining these parks is set out in *The Urban Municipalities Act*.

How important are recreational lands?

Almost everyone partakes in some form of outdoor recreation, such as skiing, swimming, picnicking, or just driving for pleasure. The benefits are immense, whether spiritual, physical, or both. With the increasing trend to urban living, these recreational activities take on even more importance in our lives. Even in the rural areas, technological changes have led to a more sedentary lifestyle leaving more time and energy for recreational pursuits.

The travel and tourism industry, which is based on outdoor recreation, is very important to our economy. During 1975, over 400 million dollars were spent in Saskatchewan on travel/tourism by resident and non-resident travellers. This in turn results in jobs in many areas, including sales of recreational equipment, accommodations, food services, and transportation.

Percentage of Saskatchewan Residents Participating In Selected Outdoor Activities*

Water Sports	
Swimming	32
Power Boating	23
Canoeing	9
Sailing	4
Water Skiing	7
Winter Sports	
Snowmobiling	26
Snow Skiing	10
Sledding, Tobogganing, etc.,	11
Ice Skating	17
Fishing, Hunting, etc.	
Fishing	20
Hunting	19
Other Sports	
Golfing	17
Horseback Riding	10
Bicycling	9
Tennis	4
Camping, Hiking, etc.	
Tent Camping	13
Trailer Camping	12
Pick-up Camper	3
Climbing	14
Hiking	29
Less Active Pursuits	
Nature Study and Viewing	9
Outdoor Photography	20
Visiting Historic Parks	43
Other Parks	49
Driving for Pleasure	66
Sightseeing	52
Picnics, Cookouts	69

*These figures are drawn from several sources, are highly variable, and are meant only to give some indication of participation in these activities.

What problems are associated with recreational lands?

Although a large portion of the province is high quality land for outdoor recreation, this land covers the northern half of the province, while our population resides in the southern half. Less than 1% of the land south of the 55th parallel has been rated as having a high capability for outdoor recreation by the Canada Land Inventory. These areas are located primarily along the river valleys and in the Cypress Hills and Moose Mountain uplands.

The increasing move to urban centres (over 40% of our population now lives in cities) combined with an increase in both leisure time and disposable income has resulted in an increased demand for land for recreation, and overcrowding in the available areas near the larger centres. Because most recreational activities are satisfied in the after work period or on weekends, recreation areas should be close at hand.

Increased use of private lands for recreational activities, such as hunting and snowmobiling, has resulted in conflicts with landowners. As these conflicts increase, more private land is closed to the public leading to further crowding in the available areas.

Uncontrolled development in resort areas in the past has resulted in reduced options for public developments. Many of the best beach areas and shorelands around our southern lakes are in private hands, and cottage developments have limited public access and use.

Overcrowding is a problem in some public areas and parks. Overuse of certain recreational lands has resulted in a deterioration of the aesthetic values that attracted people in the first place. Fragile or sensitive vegetation and soils are easily damaged by some types of activities or by overuse.

Acquiring additional quality recreation land in the southern half of the province is difficult, as most of this is already privately owned.

Number of Saskatchewan Households Owning Outdoor Recreational Equipment
(in thousands)

	1971	*1974*	*1976*
Skis	—	—	32
Snowmobiles	24	40	50
Bicycles (Adults)	—	90	116
Vacation Homes	13	18	15
Overnight Camping Equipment	26	30	30
Any Type Camping Equipment	55	70	72
Tents	26	30	30
Tent Trailers	11	13	19
Travel Trailers*	8	15	22
Truck Campers	5	10	11
Boats (All Types)	26	37	42
Canoes	—	7	9
Outboards	22	28	30

*Does not include mobile homes.

Source: Statistics Canada, 1977. *Travel, Tourism and Outdoor Recreation 1975-76.*

What conflicts occur over the recreational use of land?

Conflicts over the recreational use of land occur between recreational users and other land users, and among the recreational users themselves.

As outdoor recreation takes a variety of forms, conflicts between users can and do occur. The users of power vehicles (all-terrain vehicles, power boats, snowmobiles) may conflict with non-power vehicle users (hikers, canoeists, skiers,); hunters may conflict with nature viewers or hikers. Such conflicts are often a result of a failure to zone recreational areas for different uses, or to classify parks as to types of recreation that are suitable.

The vast majority of the land in the southern half of the province, both private and Crown owned, is in **agricultural uses** and conflicts between recreational users and agricultural users often arise. Some recreational activities, such as hunting, require large areas, much of which is in agricultural use. Farmers complain of damage caused to stock and property by hunters and others; fences are cut, livestock shot, and hunting pits left unfilled. Hunters complain that farmers destroy critical wildlife habitat, and that Crown lands are managed in such a way as to reduce their value for wildlife. Land is removed from agricultural uses to provide parks, produce wildlife, or for other recreational uses.

Forest harvesting can destroy the recreational potential of large areas of land, especially around water bodies. Pulp mills can pollute both the air and water, and destroy the recreational appeal of surrounding areas. Recreational users destroy thousands of acres of valuable forests each year through the careless use of fire.

Mineral exploration and extraction can destroy the aesthetic appeal of large areas, and cause pollution of waters used by recreationists. The exploration and extraction of minerals within designated parks is a subject of controversy.

Settlements generate large amounts of waste, which has resulted in the degradation of recreational water. Sewage dumped into the Saskatchewan River and the Qu'Appelle River systems has contributed to the algal and weed growth in the lakes, and to serious degradation of water quality in the rivers.

Utility developments, such as hydroelectric dams, destroy large areas of terrestrial wildlife habitat, and change the nature of the rivers from flowages to reservoirs. This alters the recreational use of the area, enhancing some types and eliminating others.

Wildlife populations and sensitive plant communities can be destroyed or drastically altered by recreational users. Many species of birds are sensitive to disturbance during the breeding period, and recreational users have caused entire colonies of some species to be lost. Snowmobiles disturb many species during the period of the year when they have the least energy to expend, resulting in indirect deaths or reduced reproduction.

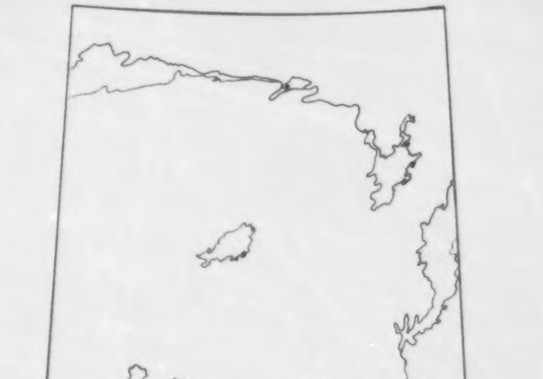
What are some alternatives?

In areas of intensive recreational use, careful planning for the various non-conflicting uses can alleviate some of these conflicts. All parks cannot accommodate all types of use, and a classification system for the parks and recreation network is currently being drawn up, with different parks being classed for different types of activities.

Many outdoor activities lend themselves to a "multi-use" concept of land use. Different activities can take place on the same land at different seasons; some types of outdoor recreation are compatible with other land uses, and these can be explored and encouraged.

In the past, recreational users have not had to pay for many of their activities, and a concept of "user pays" is receiving more support. Farmers and private landowners might be more willing to provide wildlife habitat or accommodate recreational activities on their land if they were to receive some form of compensation instead of having to pay for the abuses.

Recreational uses for certain lands, such as abandoned rail lines, can be explored, and new forms of outdoor activity encouraged. The potential of much of our land for low-intensity, innovative recreational use has hardly been explored.



NATIONAL & PROVINICAL PARKS

Visitors Entering Provincial Parks

Provincial Parks	*1968*	*1971*	*1977*
Battlefords	106,744	149,376	308,900
Buffalo Pound	112,464	109,504	156,756
Cypress Hills	119,560	169,428	255,148
Danielson	—	37,012	117,700
Douglas Park	—	—	43,472
Duck Mountain	276,324	332,756	368,860
Echo Valley	157,280	374,532	203,632
Good Spirit Lake	135,348	82,484	103,900
Greenwater	158,480	146,660	154,636
Katepwa Point	—	—	37,908
Lac La Ronge	—	—	NA
Meadow Lake	155,356	226,648	389,384
Moose Mountain	422,976	460,212	629,560
Nipawin	23,956	29,840	22,744
Pike Lake	182,120	194,744	184,352
Rowan's Ravine	52,600	85,600	161,396
Saskatchewan Landing	—	—	131,196
TOTAL	1,903,208	2,398,796	3,269,544

Source: Saskatchewan Dept. of Tourism and Renewable Resources. *Visitation Report Provincial Recreation Development Areas, 1977.*

Guidelines for Recreation Lands

The following guidelines were approved by delegates attending Land Use Workshop II.

Philosophy:

1. Recognize that individual differences and individual needs exist for recreational experiences.
2. Emphasize aesthetic values in recreational land allocation.
3. Promote use to the point where natural balances are not overburdened.
4. All resource users must be assessed appropriately to cover the cost of maintaining and restoring the resource.

Objectives:

1. Recognize that land, in addition to designated park land, is required for certain recreational pursuits and tourism (e.g. ski areas).
   - provide incentives to landowners to allow use of land by recreationists.
   - provide a system of multi-use corridors for recreational and cultural user groups.
2. Improve public access to lakes and parks and encourage usage that is consistent with the carrying capacity of the resource.
   - develop carrying capacity indicators as a guide to park management.
   - develop an education information program on proper land usage to counter vandalism and mis-use of private and public lands.
3. Develop lake and park zoning and use classification systems.
   - minimize the suburban (trailer city) emphasis in park development to ensure retention of the natural environment (relate to Philosophy No. 3 above).
   - encourage use of public transit in and to parks.
   - to prevent ribbon development around lakes and shorelines maintain substantial portions of undisturbed shoreland.
4. Utilize marginal lands for specific recreational uses, when feasible.

Additional Reading

Environment Canada. 1972. *Qu'Appelle Basin Study Board Report on Recreation.* Volume 1. Inland Waters Directorate, Water Planning and Management Branch. Regina. 94 pages.

Rump, P. C. and K. Harper. 1977. *Land Use in Saskatchewan.* Environment Saskatchewan. 192 pages.

Saskatchewan Department of Natural Resources. 1973. *Seminar on Outdoor Winter Recreation.* Held at Regina, Saskatchewan, May 12, 1973. Transcript of Proceedings. 135 pages.

Saskatchewan Parks and Recreation Association and Saskatchewan Recreation Society. 1977. *Recreation Land Use Seminar.*

Above publications are available on loan from the Department of the Environment, 5th Floor, 1855 Victoria Avenue, Regina, Saskatchewan.

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FACT SHEET 10

Land Use In Saskatchewan

Land Use Policy Committee
1978

LAND USE IN THE NORTH

Saskatchewan, like the other provinces of Canada, is faced with resolving present and potential land use conflicts. As we continue to modify the land, choices must be made as to how we can most wisely use this resource.

The Land Use Policy Committee is distributing a series of Fact Sheets on land use and the land use policy development process in Saskatchewan. This Fact Sheet focuses on land use in the north.

The north, as defined here, is that part of the province that is designated the Northern Administration District (NAD). The NAD includes almost 100,000 square miles of land lying mainly north of the 54th parallel, or a line running from north of Meadow Lake to south of Cumberland House. This includes about 40% of the province.

Present Land Use in the North

Land use and land use issues in the north differ in many ways from those in the rest of the province. This is due to several factors.

- The northern part of the province is underlain by the precambrian shield. Shallow soil development on the shield, abundant lakes and rivers, cooler temperatures, and shorter growing season do not favor agriculture which was the basis for development of southern Saskatchewan.
- Northern Saskatchewan has a lower population density than southern Saskatchewan. Three per cent of the total provincial population is settled in the north.
- About 80% of the population is of Indian ancestry with a long history of traditional resource use.
- Almost all land in the north is Crown land, compared to about 35% Crown land in the rest of the province.
- The Department of Northern Saskatchewan (DNS) is responsible for administering most programs in the north, including those that affect land use.
- Land use in the north is mainly traditional resource use (hunting, trapping and fishing) and resource extraction (forest harvesting and mining). Recreational use is becoming increasingly important, especially in the southern part. The demand for residential development, cottage leases and campgrounds is increasing as is the use of outfitter camps.

Land in the north, as elsewhere, is used in a number of ways to meet a variety of needs.

Trapping provided income to an estimated 1,500 trappers who earned about 1.4 million dollars in the 1976-77 season. A substantial portion of the fresh meat is supplied by trapping. There are also seven fur ranches in the north.

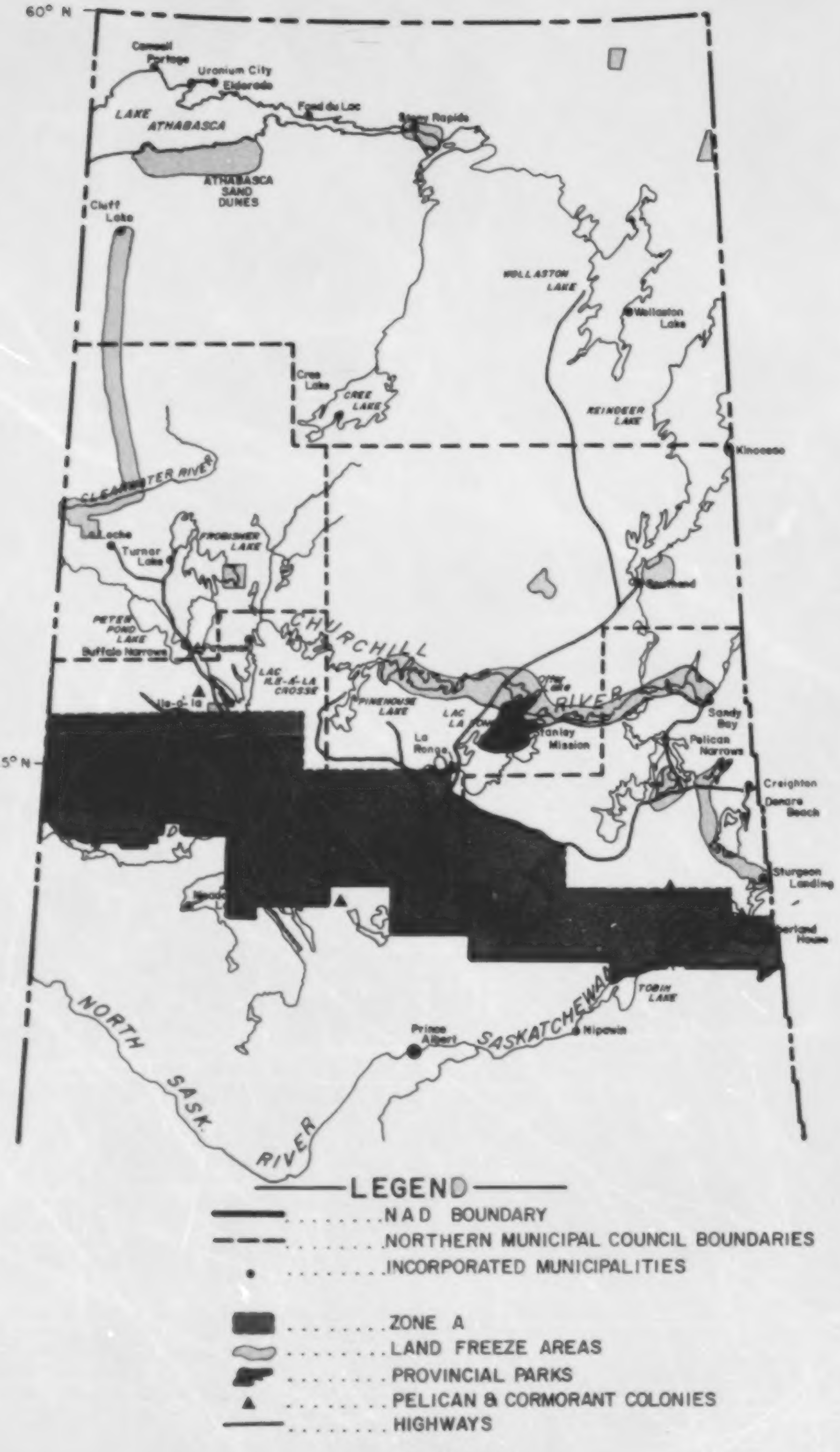
Hunting for moose, and to a lesser extent caribou and game birds, is an important source of fresh meat for northern residents.

Forest harvesting is an important industry which employs some 1,800 people in the NAD. Nearly all harvesting takes place in the Commercial Forest Zone, which covers some 20,000 square miles along the southern edge of the NAD. There are about 13 saw mills and other small special products operations within the NAD which supply mainly local and regional needs. The bulk of the harvest is used to supply mills located south of the NAD.

Mining activity is centered around uranium deposits located in the northern third of the area. Active mines are located in the Uranium City and Wollaston Lake areas. Additional finds have been made in the area around Rabbit Lake and near Cluff Lake, Key Lake, Midwest Lake, and at Maurice Bay on the north shore of Lake Athabasca. Recently, the government accepted the recommendation of the Bayda Inquiry that further development of uranium mining proceed. Mineral ores containing metals such as gold, copper, and zinc, occur in a number of areas, but the only active mine is located in the Flin Flon-Creighton area. About 1,700 people are currently employed in the mining industry in the NAD.

Trapper's camp, Foster Lake. Many northerners depend upon traditional resource use such as trapping and fishing.

NORTHERN ADMINISTRATION DISTRICT


60° N
Camsell Portage
Uranium City
Eldorado
Fond du Lac
Stony Rapids
LAKE ATHABASCA
ATHABASCA SAND DUNES
Cluff Lake
WOLLASTON LAKE
Wollaston Lake
Cree Lake
CREE LAKE
REINDEER LAKE
Kinoosao
CLEARWATER RIVER
La Loche
Turnor Lake
FROBISHER LAKE
Southend
PETER POND LAKE
Buffalo Narrows
CHURCHILL RIVER
LAC ILE-Á-LA CROSSE
Ile-á-la
PINEHOUSE LAKE
LAC LA RONGE
La Ronge
Otter Lake
Stanley Mission
Sandy Bay
Pelican Narrows
Creighton
Denare Beach
Sturgeon Landing
berland House
55° N
TOBIN LAKE
Nipawin
Prince Albert
NORTH SASK. RIVER
SASKATCHEWAN
LEGEND
NAD BOUNDARY
NORTHERN MUNICIPAL COUNCIL BOUNDARIES
INCORPORATED MUNICIPALITIES
ZONE A
LAND FREEZE AREAS
PROVINCIAL PARKS
PELICAN & CORMORANT COLONIES
HIGHWAYS

Commercial fishing takes place at about 185 lakes, with an estimated 1,000 to 1,200 people actively involved in fishing; another 200 work at processing the catch. In the 1976-77 season, 7.5 million pounds of fish were harvested, with a lake value of over 2 million dollars. An additional 275,000 pounds were harvested for local domestic use, and another 500,000 pounds for fur ranch feed.

Recreation and tourist use of the area has increased greatly in recent years. The multitude of clear lakes, forests, and superb fishing have resulted in numerous recreational subdivisions, campgrounds, and commercial outfitters establishing in the north. As new areas are opened up by road, development quickly follows. Currently, there are over 107 campgrounds and picnic sites, and about 200 outfitter camps throughout the NAD.

Agricultural activities are limited to a few areas along the southern boundary of the NAD. Wild rice is harvested in the La Ronge, Jan Lake and Cumberland House areas. The government operates 4 farms at Cumberland House, Green Lake and Ile-a-la-Crosse. These are primarily beef cattle operations.

Hydroelectricity is generated at three plants to provide power to the mines and local communities. Two of these plants are located near Uranium City and the third on the Churchill River at Island Falls.

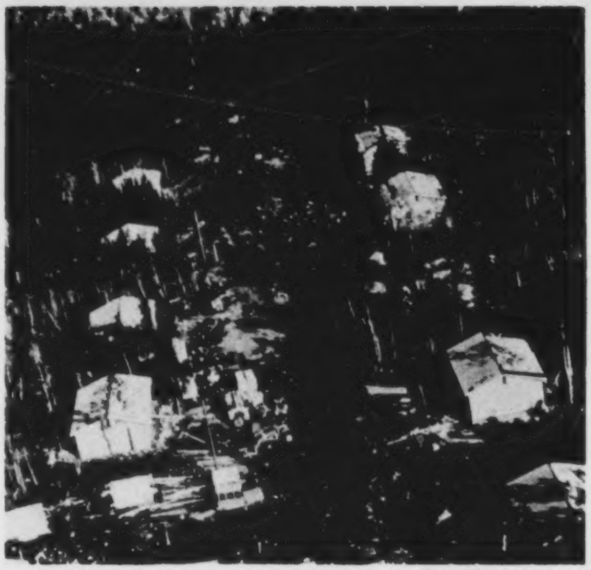
Transportation in the north relies more on air and water transport than does the rest of the province. Roads are located mainly in the southern third of the NAD. The DNS is responsible for some 500 miles of all weather road, 200 miles of winter road, and 200 miles of resource access roads. The Department of Highways is responsible for another 1,500 miles of road, and forest product companies have built haul roads and trails. The Department of Highways has upgraded 450 miles of road and paved or oiled 200 miles during the past six years and plans to upgrade 600 miles of existing roads during the next five years. About 20 settlements have landing strips but the majority also use lake surfaces for landing aircraft. Local travel in many areas is by boat.

Settlements are located mainly south of the Churchill River. There are approximately 50 settlements, with only three incorporated as towns. Many are growing rapidly, and settlement planning is required to provide housing, sewer and water, and other services. Total population of the NAD is about 30,000 people.

The role of local government is evolving in northern Saskatchewan. Incorporated Settlements are administered by a local council in the same manner as in the south. The remainder of the NAD is divided into five districts; each elects a member to the Northern Municipal Council. Eight settlements have a Local Community Authority (LCA) which functions much like a village council in the south. Other settlements have established Local Advisory Committees (LAC) which advise the Northern Municipal Council regarding issues in their communities. The role of the Northern Municipal Council is evolving towards that of a rural municipality in southern Saskatchewan. The incorporated communities of La Ronge, Creighton and Uranium City have formed an organization called the Saskatchewan Association of Northern Communities.

Land Ownership, Leasing and Designated Lands

No Crown land within the NAD, outside of permanent settlements, is for sale, although it may be leased or licensed for a number of uses. Some areas are subject to a land freeze, and may not be leased or leased only under special circumstances pending further study of special features of the land or development proposals. Other lands have been designated for a specific use or uses. Examples are Indian reserves, provincial parks, and areas for wildlife protection.



Providing northern housing requires careful planning and construction.

Leases are given for traditional resource use, such as trapping, only to northern residents (defined as anyone who has lived in the north for 15 years or half of their lifetime). These are let for 10 years. Commercial leases are also let for valid commercial uses, for a period of 21 years. Leases are also given for residential use outside of settlements.

For recreational cottage leasing, the NAD has been divided into two zones. Zone A covers the southern edge of the area, south of a line from about Ile-a-la-Crosse, south of La Ronge, to Namew Lake (see map). Within this area, recreational land may be leased only in subdivisions. In the rest of the NAD (Zone B), unsurveyed leases are let for recreational uses in addition to surveyed recreational lots in subdivisions.

Lease terms on unsurveyed parcels are 10 years duration while those on surveyed registered lots in recreational subdivisions are 21 years. Unsurveyed leases are subject to a number of restrictions. For example, they cannot be within a certain distance of roads, other leases, prominent beaches, waterfalls, and significant rapids.

Some 50 **Indian reserves** in the NAD occupy about 500 square miles of land. There are two developed **provincial parks,** Lac La Ronge Provincial Park (600 square miles) and Nipawin Provincial Park (250 square miles). Land is reserved for a potential provincial park near Ile-a-la-Crosse. Several other areas are reserved for possible future park development. About 15 areas identified by the International Biological Program as potential **ecological reserves** are also subject to leasing restrictions. Areas in which pelicans and cormorants nest have been excluded from leasing to protect these species.

The major forest areas in the province are owned by the Provincial Crown. Much of the NAD is within the **Northern Provincial Forest** and is therefore subject to regulations under The Forest Act.

Current Land Use Issues and Conflicts

Land Use conflicts tend to center around the management and protection of natural resources. The question of who should benefit most from the resources of the north is often heard. Like people anywhere, northern residents want control over decisions about major development which may affect their lifestyles and livelihoods.

Land use issues which were identified at land use workshops in northern Saskatchewan in May, 1978, include: management and protection of natural resources; waste disposal; land entitlement; control of rate of development; recreational use; and leasing policies.

Resource Use

Commercial fishermen are concerned that recreational fishing encroaches on the commercial catch. Trappers are also finding that the trapping areas are being affected by recreational use, cabin leases, and developments such as mines and air strips. Northern trappers and hunters are concerned about the increasing use of airplanes for hunting. Northerners feel that there should be more local control over timber leases, fishing, and trapping.

Fish and wildlife populations are adversely affected by both the increase in activity in the area and the new means of travel. As roads and trails open up new areas, road hunting can reduce local game populations. The increased use of snowmobiles and outboard motors for recreation and wildlife harvesting may have serious, long-term effects on wildlife populations. Many species, such as eagles, loons, and colonial nesting birds, are very sensitive to disturbance when nesting and the increased activity can have serious, unintentional impacts on them.

Some northern people believe there is a need to maintain an accurate inventory of wildlife resources and habitat. Another concern is the need for enforcement of protection for breeding and spawning areas.

Northern residents suggest that there is a need to preserve historical, archeological, and unique areas. At the same time, some feel that there is a lack of flexibility in regulations currently enforced in restricted areas and a lack of economic considerations, public information, and local contact in managing these areas.

Expanded development of uranium deposits in the north is also a topic of much debate. The potential benefits to the province, and to northerners in particular, are great. However, questions regarding the safe disposal of wastes, potential long-term impacts, and who will get the jobs and other benefits are being raised.

Development of the Churchill River and other hydroelectric potential is another issue of concern to northern people.

Issues related to recreational use include: the increased use of facilities which results in overcrowded camping areas; the inability of the land to absorb the impact of intensive use; and the need to preserve wilderness areas for recreation.

Land Entitlements

Five Indian bands in the NAD are currently entitled to additional lands in fulfillment of their treaty settlements, and settlements are being negotiated. Three other bands are also negotiating their rights to entitlement. The total treaty entitlement now recognized is about 500,000 acres. The issue of the aboriginal rights of Metis and "non-status" Indians is also a concern to people of the north.

Settlements

Settlement planning in the past has been minimal, and has often led to problems of poor community design, lack of essential services, and pollution problems. Upgrading of these services has been a major thrust of government programs. In many cases, southern technology and planning techniques have been transplanted to the north without considering the special needs of northerners or the very different environment.

Some community councils suggest that it is difficult to plan for future development of settlements because they lack control over development outside their immediate area.

Leasing policies are also a topic of concern. Mortgage money to build on leased land is difficult to obtain. Some residents have suggested that longer term leases should be available on unsurveyed Crown land and that purchase should be possible after 5 to 10 years occupation. Northern people have expressed the viewpoint that there is a lack of flexibility in cabin lease restrictions and that distances between leases should depend upon local situations.

Waste Disposal

Waste disposal is another land use problem in northern Saskatchewan. Soils which overlay bedrock are often shallow and incapable of absorbing wastes. High water tables and the abundance of water bodies also create problems in disposal of wastes. Water bodies are readily polluted by run-off and dumping of wastes.

Waste disposal issues raised by northern people include: the need for waste disposal guidelines; the need to recycle the many materials which are brought in and remain in the north; the need to identify non-contaminated landfill; and the need to enforce pollution control. At the same time, some waste disposal regulations are considered too restrictive and it was suggested that there will need to be tradeoffs between environmental protection and economic benefits.

As forestry, mining, settlements, transportation, and recreational developments take place in the north, conflicts are arising between the old and new patterns. The rate of development is increasing and it can be anticipated that land use conflicts will increase and intensify in the years ahead. While land use problems in the north may differ in type and degree from those in the south, they are nevertheless as important to the people concerned.

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Land Use Policy Committee
1978

WATER

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential land use conflicts. As we continue to modify the land, choices must be made about how we can most wisely use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan.

Water is the most basic of man's resources. Without it, no living thing can survive. Water use and land use are closely related. The availability of water in adequate quantity and quality determines many of our land uses — where we locate our settlements, what kinds of crops we grow, and where we spend our leisure time. Our use of land in turn affects water quality and quantity. Water quality may change with the addition of sewage and industrial waste, and runoff from cultivated and irrigated fields, and feedlots. The demand for water for municipal, industrial, agriculture, recreation and other uses is growing. Effective resource management must recognize the interrelationships between land and water management.

This fact sheet presents information on water resources and then examines the interrelationships between land use and water quality and quantity.

What are our water resources?

Saskatchewan has an abundance of fresh water, amounting to 11% of all the fresh water in Canada. However, most of this is located in the northern half of the province, while over 95% of our population resides in the south.

Surface water occurs in potholes, marshes, lakes, rivers, streams and reservoirs. Saskatchewan has an estimated 20 million acres of surface water covering some 12% of our land area. In southern Saskatchewan, the amount of water on the surface varies greatly from year to year, depending on precipitation and evaporation.

Parts of four **major river basins** drain the province: the Mackenzie-Athabasca in the northern quarter, the Churchill in the north-central area; the Saskatchewan-Nelson in the southern half (including the Red Deer, Qu'Appelle, Assiniboine and Souris River Basins); and the Missouri-Mississippi in the extreme southwest (including the Frenchman River). Much of the southern third of the province drains into internal basins which have no outlets to major river systems. This occurs in the Wynyard-Humboldt, Kindersley-Biggar, Maple Creek and Assiniboia-Gravelbourg areas.

Thousands of **lakes** are located in northern Saskatchewan. The largest, Lake Athabasca, has a surface area of almost 2 million acres (Table 2). Permanent lakes, with water suitable for a variety of uses, are scarce in the southern half of the province; the best known are the 8 lakes of the Qu'Appelle River System. Two large prairie lakes, Old Wives Lake and the Quill Lakes, are internally drained. The water is consequently saline and does not support a fishery nor recreational developments. However, both lakes are significant waterfowl staging areas.

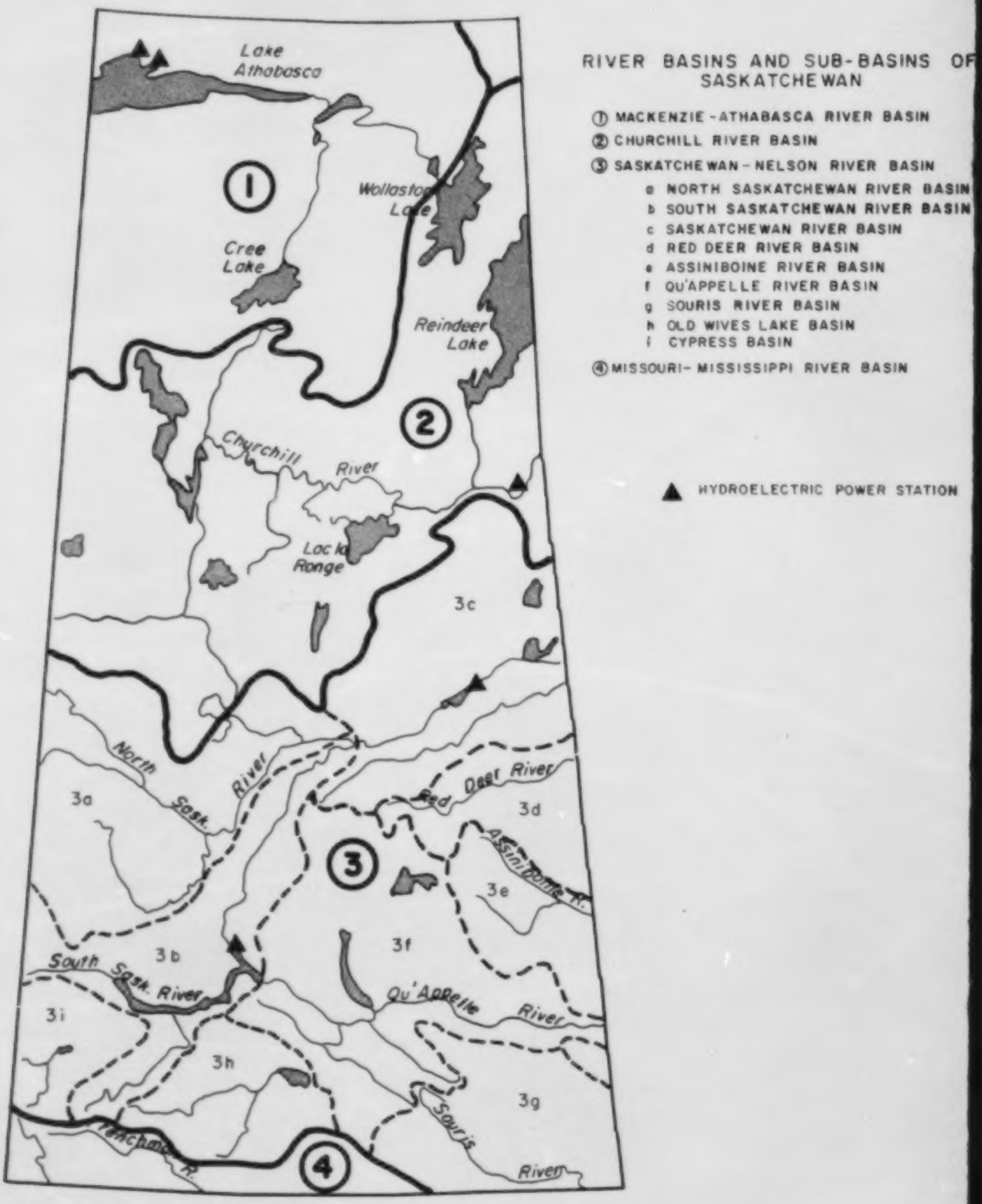
Since early settlement, individual farmers have created small **reservoirs** for domestic, stockwatering, and irrigation uses. In later years, large dams were constructed with PFRA assistance. Many communities and industries have created reservoirs for their own use, as have agencies such as Duck Unlimited. The Saskatchewan Power Corporation has constructed Tobin Lake, Boundary Reservoir and Cookson Reservoir to provide water for hydro or thermal power generation.

There are 28 reservoirs in the province with a surface area greater than 1,000 acres; only Lake Diefenbaker (108,000 acres) and Tobin Lake (75,000 acres) exceed 4,000 acres.

The largest sources of **ground water** are the sand and gravel aquifers which are actually underground rivers and streams. These aquifers may be up to 300 feet deep and up to 12 miles wide. Twenty major aquifers have been identified in the province, each capable of yielding millions of gallons of water per day.

An overabundance or lack of water results in water supply problems. Flooding occurs following periods of high snowfall or rainfall. For examples, in 1974, 8.5 million dollars damage was caused by flooding in Saskatchewan. Many additional dollars are spent on expensive engineering works to reduce flooding; nevertheless, the damage potential continues to increase as drainage patterns are altered by removing the vegetation from watersheds, draining wetlands and natural basins, and road, dam or other construction. A comprehensive and co-ordinated approach designed to ensure the safe, efficient use of flood hazard areas and avoid the public expenditures which result from flooding is being implemented under The Water Resources Management Act and the federal-provincial flood damage reduction agreements signed in the spring of 1977.

Too little water, a problem in much of southern and southwestern Saskatchewan, limits agricultural, industrial, and other developments and the uses that can be made of adjacent land. A lack of precipitation resulted in municipal water shortages during 1977. Also, all water in several of the smaller drainage basins in the south and southwest is allocated or reserved. All water in Lodge, Battle and Long Creeks is allocated; all water in the Poplar and Wood Rivers (below Thompson Reservoir) is reserved.



RIVER BASINS AND SUB-BASINS OF SASKATCHEWAN

① MACKENZIE-ATHABASCA RIVER BASIN
② CHURCHILL RIVER BASIN
③ SASKATCHEWAN-NELSON RIVER BASIN
a NORTH SASKATCHEWAN RIVER BASIN
b SOUTH SASKATCHEWAN RIVER BASIN
c SASKATCHEWAN RIVER BASIN
d RED DEER RIVER BASIN
e ASSINIBOINE RIVER BASIN
f QU'APPELLE RIVER BASIN
g SOURIS RIVER BASIN
h OLD WIVES LAKE BASIN
i CYPRESS BASIN
④ MISSOURI-MISSISSIPPI RIVER BASIN
▲ HYDROELECTRIC POWER STATION
Lake Athabasca
1
Wollaston Lake
Cree Lake
Reindeer Lake
2
Churchill River
Lac la Ronge
3c
North Sask. River
3a
Red Deer River
3d
3
Assiniboine R.
3e
3b
3f
South Sask. River
Qu'Appelle River
3i
3h
3g
Souris River
Frenchman R.
4

Table 1

ANNUAL MEAN FLOWS FOR MAJOR SASKATCHEWAN RIVERS

	Mean Annual Discharge in Acre-Feet*
Fond du Lac River at Stony Rapids	7,660,000
Churchill River at Island Falls	17,200,000
North Saskatchewan River at Prince Albert	6,240,000
South Saskatchewan River at Saskatoon	7,010,000
Saskatchewan River below Tobin Lake	12,400,000
Red Deer River near Hudson Bay	250,000
Asssniboine River at Kamsack	109,000
Qu'Appelle River at Tantallon	180,000
Frenchman River at International Boundary	59,200
Wood River near Lafleche	32,800
Souris River near Oxbow	71,000

* An acre-foot of water would cover an acre of land one foot deep.

Source: Environment Canada. *Historical Streamflow Summary Saskatchewan to 1973.* Inland Waters Directorate, Water Resources Branch.

Water Quality

When we refer to water quality, we speak of the characteristics of the water in relation to some use, such as recreation, food processing, irrigation, or human consumption. Water has numerous qualities; it may be hard or soft, have taste or odour, be clear or cloudy, cool or warm. Natural processes and the activities of man influence water quality.

The chemical, physical, and biological properties of water vary from place to place and may change with the season and climate. Water properties also depend upon the type of rocks and soil over which the water passes. Surface waters in the southern half of the province tend to be both highly mineralized and high in nutrient content.

The quality of ground water also varies. Most of the ground water in southern Saskatchewan has a range of from 1,000-4,000 ppm total dissolved solids. When dissolved solids are in excess of 3,000 ppm, water is considered to be brackish. Ground water in southern Saskatchewan is generally too highly mineralized for irrigation, although most is suitable for human consumption.

With the passing of time, surface water bodies age and become "eutrophic". Dissolved minerals and organic nutrients result in abundant plant growth such as algae and weeds. During their decay, dissolved oxygen is used up and decomposition products accumulate.

Domestic, municipal, and industrial wastes which are discharged into surface waters add large amounts of nutrients. These wastes contribute to the nuisance growths of aquatic algae and weeds during the summer months and fish kills during some winters.

Table 2

MAJOR LAKES OF SASKATCHEWAN

Lake	Gross Area (acres)
Athabasca	1,960,960
Reindeer	1,640,320
Wollaston	662,400
Cree	354,560
Lac La Ronge	349,440

Source: Environment Canada. *Canada Water Year Book 1975.*

Agricultural activities including land clearing and breaking, wetland drainage, irrigation, feedlot runoff, and chemical applications affect water quality. These changes are usually referred to as "pollution".

The location of feedlots, waste disposal grounds, and private sewage disposal systems, is also important if the pollution of ground water is to be avoided.

Water quality is monitored throughout the province by both federal and provincial government agencies. The federal government operates 65 water quality monitoring stations in all major river basins. The province operates another 400 stations where samples are collected and analyzed on a regular basis.

How is our water managed?

The British North America Act divides responsibility for water management between the provincial and federal governments.

The province is generally regarded as the owner of water resources within its boundary, except on federal lands, and has the basic authority to manage water resources, authorize development, license use, regulate flows, and levy fees. The B.N.A. Act also gives the province the right to legislate on such matters as industrial and domestic water supply, power development, irrigation, recreation and pollution abatement.

Relevant provincial legislation includes The Water Resources Management Act, The Water Rights Act, and The Ground Water Conservation Act. The Water Resources Management Act sets out responsibilities for overall policy formulation and planning in the field of water management. All water users except domestic users must be licensed under The Water Rights Act. The Ground Water Conservation Act allows collection of data on ground water supplies and regulates the development, utilization and conservation of ground water. Legislation pertaining to fish and wildlife is presented in *Fact Sheet 8 — Fish and Wildlife.*

The federal government has exclusive rights over navigation and developments on international waters, and is responsible for administering the Boundary Waters Treaty. It may also legislate concerning works situated entirely within the province, if such work is considered to be of national significance. The most important federal legislation is The Canada Water Act, which expresses principles of integrated water resource planning by the federal and provincial governments and special administration arrangements where water quality is of concern.

Because water does not recognize political boundaries, management must also take place on international and interprovincial levels. At the international level, special boards with Canadian and United states members are established by the International Joint Commission to investigate common water problems. The Prairie Provinces Water Board Master Agreement on Apportionment, made between the three prairie provinces and the federal government, stipulates the apportionment of water from rivers crossing provincial boundaries. The provinces of Alberta and Saskatchewan are each entitled to one-half of the natural flow of water originating in or flowing through them; the remaining one-half must be allowed to flow into the adjacent downstream province.

How is our water used?

We use water in many ways: some is **consumed** in the home, by industry, and by agriculture; some in **used and returned** to the source, often carrying wastes and always changed in quality; some is **used "as is"**, to produce fish or for recreation. A large portion of all water stored for use is lost through evaporation.

Rural domestic and livestock water use refers to water used by the rural population and by communities not served by a municipal water system, but excludes intensive livestock operations. More than 75% of this water is obtained from wells and the rest from dugouts, natural basins, or small impoundments. Saskatchewan rural residents use some 14.5 million gallons of water per day (gpd), or about 30 gallons per person. Most of this is consumed, with about 30% returned to the source. Impoundments for domestic use require licensing, and 6,600 are currently licensed in the province.

There are about 450 **municipal water systems** in the province which provide water for residential, commercial, industrial and public uses. Municipal uses amount to about 40 million gpd, or about 15% of the total water withdrawals in the province. This amounts to about 80 gpd per person served in Saskatchewan compared to an average of 115 gpd per person in Canada. The amount used varies from place to place (see Table 3).

Industrial users are defined here as those who obtain their water from sources other than municipal systems. Ninety industrial water supply projects are currently licensed in the province. Use was estimated to be about 6% of the provincial water withdrawal in 1972. Industries that require large amounts of water include the pulp and paper, petroleum, and sodium sulphate industries. The largest single user is the pulp mill at Prince Albert, which uses some 25,000 acre-feet of water annually.

Table 3

MUNICIPAL WATER USE

	Regina	Moose Jaw	Saskatoon	Canada
Residential	45.0%	38.8%	28.0%	55%
Commercial	17.5%	23.9%	11.0%	27%
Industrial	9.5%	19.0%	31.0%	
Public	28.0%	18.3%	30.0%	18%

Table 4

RESIDENTIAL WATER USE IN CANADA

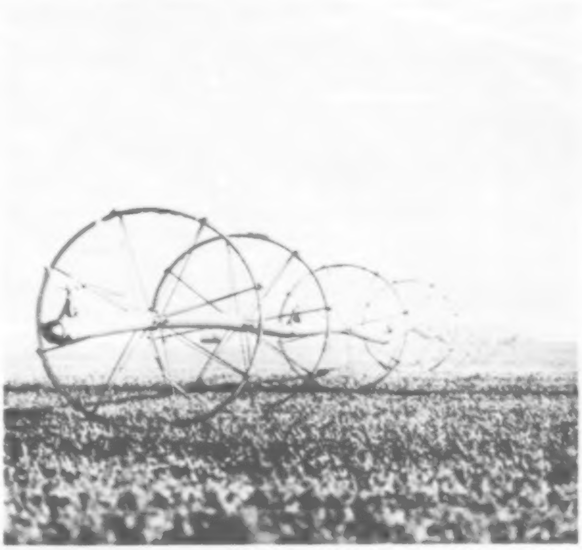
Bath, Personal	28%
Laundry, Dishes	23%
Toilet	45%
Drinking, Cooking	4%

Total manufacturing use in the province amounts to about 34 million gpd. About 15% of this is actually consumed; the rest is returned to the source.

Agricultural uses include water for irrigation and stockwatering. Much of the water for livestock comes from domestic supplies. But intensive livestock operations, such as feedlots, require a large water supply at a specific site.

Irrigation uses are characterized by a few large point withdrawals along our major watercourses and lakes, and many smaller withdrawals scattered throughout the province. In 1976, there were about 3,300 projects licensed to irrigate 210,000 acres. Most supply water to only a few acres. The exception is the South Saskatchewan Irrigation Project at Lake Diefenbaker, where some 30,000 acres are intensively irrigated. About 100,000 acres are backflood projects, which hold back spring runoff to flood the area and then release it. The remaining 110,000 acres are intensively irrigated, requiring water throughout the growing season. It takes about two acre-feet of water to irrigate one acre of land.

Electric power is generated by hydroelectric and thermal power plants in Saskatchewan. There are five hydroelectric stations in the province. Three of these were constructed to provide power to mines at Uranium City and Flin Flon, and the other two are operated by the Saskatchewan Power Corporation (SPC) at Coteau Creek and Squaw Rapids to provide power to the provincial grid. In 1976, these two plants provided 25% of the province's power requirements. The SPC also operates five steam and five coal and gas plants. Water is required in the steam plants for cooling and steam production. Steam generation requires 30-50 gallons of water for each KWH of power produced. In 1976, these plants produced over 5 million KWH. Only 4 to 5% of the water used by steam plants is actually consumed and the rest is recycled.



Increased demand for irrigation requires careful planning of water allocation.

Recreational uses generally require water of good quality (unpolluted). There are two types of demand for water for recreational purposes: water for outdoor recreational activities such as swimming, boating and water skiing; and to support fish and migratory waterfowl, which provide fishing and hunting.

Fish and wildlife require water either for drinking or as habitat for part or all of their life cycle. Over one-third of all waterfowl produced on the continent is produced on Saskatchewan wetlands. Under The Migratory Birds Convention Act, we have international commitments to protect and provide habitat for migratory birds such as waterfowl.

Rivers and lakes are important for **navigation** locally in the northern half of the province, where roads are few and expensive to build.

One of the most important uses of water at present is for **pollution abatement.** Municipal and other sewage is diluted to "acceptable" levels and flushed downstream in our watercourses.

Land Associated With Water

Certain lands have special values or problems due to their association with water. **Flood plains** beside rivers or lakes have always been attractive areas for the development of transportation, industry and housing. They are also attractive for agriculture, especially in the more arid parts of the province, because of their better forage production and their potential for irrigation. For example, along the Qu'Appelle River there are 20 market gardens irrigating a total of 900 acres, and another 30 farmers irrigating an additional 2,000 acres of forage.

Lakeshores are highly valued for recreational use and cottage developments. There are more than 200 cottage areas in the province, and more than 11,000 privately owned cottages. In the Qu'Appelle Valley, 41% of the total shoreline has been allocated to private cottages, and only 4% is available for public use.

Some shorelands have received special designation under The Water Resources Management Act, namely referred projects and reservoir development areas (RDA).

A river basin may be designated as a **referred project area** by Order-in-Council when the need is seen to co-ordinate water management and land use plans within a basin, rather than dealing with them in an independent and possibly conflicting manner. Three referred projects have come into effect: the Souris River Basin; the Churchill-Reindeer River Basin; and the Qu'Appelle River Basin.

In **reservoir development areas** (RDA), regulations are made to control the use of land, ensure safe and efficient use of the reservoir, and to protect wildlife habitat, waterfowl sanctuaries, and afforested or improved lands. Seven RDA's have been designated in the province.

Table 5

RESERVOIR DEVELOPMENT AREAS IN SASKATCHEWAN

Reservoir Development Area	Total Area (in acres)
Avonlea	3,040
Blackstrap	19,806
Bradwell	1,920
Brightwater	5,760
Dellwood	4,960
Lake Diefenbaker	1,390,080
Zelma	4,853
TOTAL	1,430,419

What are some of the conflicts that occur over water or water-associated land uses?

Because of the important role that water plays in so many of our activities and the limited amount of good quality water available in the southern half of the province, conflicts over the use of water are a common occurrence. Water which is allocated to one user often limits the amount available to other users. Conflicts can arise over these allocations. Any activity that results in a deterioration of water quality will also affect other downstream users. Any changes in the present water regimes will likely affect some users who are tied to the present regime. More specific conflicts between the various user groups are detailed below.

Agricultural users come into conflict with other users over the allocation of water, and when agricultural practices result in water quality deterioration. Draining wetlands leads to conflicts with wildlife interests and downstream property owners when flooding occurs. Clearing and breaking watershed vegetation can also contribute to downstream flooding and water pollution. Ground water supply can be affected by changes in drainage, or polluted by poorly located feedlots.

Conflicts occur between **recreational users** over shoreland use where private ownership limits public use. Conflicts may also arise over managing lakes and reservoirs for recreational uses rather than for agricultural, power generation, or fish and wildlife uses. Some recreational activities may conflict with wildlife uses of the area. Other uses, such as poorly planned cottage sites, contribute to water pollution problems. Development of reservoirs for hydroelectricity or other uses may conflict with recreational use of the river in its natural state.

Settlements and industries require large amounts of water, which may lead to conflicts with downstream users. The use of watercourses for waste disposal often conflicts with recreational, fish and wildlife, and other downstream users.

Fish and wildlife developments require water that could be used by other users. Waterfowl projects can conflict with agricultural interests over the use of both land and water. Concentrated use of some refuges by waterfowl has led to water quality problems for downstream users.

Private cottage developments along many shorelines in southern Saskatchewan restrict public access to recreational lakes.

Utilities use large amounts of water for power generation, limiting the amount available for both up and downstream users. Conflicts also arise over the operation of these reservoirs. Levels suitable for recreational, agriculture, and fish and wildlife uses may occur at different times than those suitable for optimal generation uses. Creating these reservoirs floods land that is being used for other purposes, such as agriculture or wildlife, and results in a loss of these lands. Dams may act as barriers to fish migrations.

The construction of other **utilities**, such as roads and pipelines, may result in changes to both surface and ground water patterns. If stream crossings are not carefully planned, erosion can cause water quality deterioration. Water used to test pipelines and oil spills can also pollute water.

Forest harvesting practices can result in water quality deterioration if not carefully planned. Poorly designed access roads can cause stream silting and erosion. Harvesting too close to lakes can spoil shoreland areas for recreational use. Removing forest cover increases runoff which can contribute to flooding.

The many demands for water and the lands associated with water require co-operation in sharing water use. To resolve the conflicts, a comprehensive approach to planning for land and water management is required.

Guidelines for Water

The following guidelines were approved by delegates attending Land Use Workshop II:

Philosophy:

1. Initiate sound water management programs with emphasis on conservation, consistent with both public and private interests.
2. Ensure that social and environmental costs are weighted equally with economic considerations in any water development projects.
3. All water, surface and underground, be treated as a limited resource to be conserved.

Objectives:

1. Recognize the close relationship between the quality of water and the uses made of adjacent lands.
   — consolidate provincial water management legislation and regulations.
2. Ensure the protection of land quality in any irrigation developments.
3. Control of the use and movement of water should be administered on the basis of river basin areas.
   — senior governments be responsible for clearing and maintaining drainage channels.
4. To strive for good quality water.
   — ensure water testing which monitors all aspects of water pollution.
5. Permanent water bodies on public and private land be protected as stabilizing factors in the watershed.
6. River corridors, lakes and streams be identified and appropriate measures be taken to preserve them and ensure continued public access.

Additional Reading

Environment Canada. 1975. *Canada Water Year Book, 1975.* Ottawa.

Environment Canada. 1973. *The Mackenzie Basin — Proceedings of the Inter-governmental Seminar Held at Inuvik, NWT, June 24 - 27, 1972.* Inland Waters Directorate, Ottawa.

Fisheries and Environment Canada. 1976. *Canada Water Year Book, 1976.* Ottawa.

Saskatchewan-Nelson Basin Board. 1972. *Water Supply for the Saskatchewan-Nelson Basin — A Summary Report 1972.* Queen's Printer, Regina.

Qu'Appelle Basin Study Board. 1972. *Report of the Qu'Appelle Basin Study Board, 1972.* Queen's Printer, Regina.

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FACT SHEET **12**

Land Use In Saskatchewan

Land Use Policy Committee
1978

SETTLEMENT LANDS

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential conflicts relating to land use. As we continue to modify the land, choices must be made as to how we can most wisely use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet focuses on settlement lands.

What are settlement lands?

Settlement lands are lands occupied by human settlements and include:

- incorporated settlements
  (cities, towns, and villages)
- organized and unorganized hamlets
- rural residential developments
  (hobby farms, mobile homes)
- resort areas
- Indian reserves.

Settlement lands are used for a variety of purposes including housing, commercial and industrial developments, recreation, transportation, and service facilities.

Some Facts About Saskatchewan Settlements

- Saskatchewan has a population of 961,600 people. About 678,000 people or 70% of the population lives in incorporated settlements.
- An estimate of total land occupied by settlements is not possible because information on land area occupied by settlements such as resort areas, rural residential developments, and unorganized settlements, is not available. However, incorporated settlements occupy about 300,000 acres of land in the province, or about 0.2% of the total land area.

Cities are incorporated settlements with a permanent population of at least 5,000 people.

- There are 11 cities in the province; five of these have over 15,000 residents.
- 435,800 people, or just over 40% of our population, live in cities.
- Cities occupy 110,000 acres, or 37% of the land included in incorporated settlements.
- Regina, with 157,000 people and Saskatoon with 138,500 people, are the largest centres; Moose Jaw with a population of 35,000 is the third largest centre.

Towns are incorporated settlements with a permanent population of at least 500 people.

- There are about 135 towns in Saskatchewan; 50 of these have populations of over 1,000 people.
- 161,000 people, or about 17% of our population, live in towns.
- Towns occupy 108,000 acres, or 36% of the land included in incorporated settlements.

Villages are incorporated centres with a permanent population of at least 100 people, and an assessed value of at least $200,000.

- There are about 350 villages in Saskatchewan.
- 81,000 people, or about 8.5% of our population, live in villages.
- Villages occupy about 80,000 acres, or 27% of the land in incorporated settlements.
- There are 14 resort villages in Saskatchewan. Resort villages are settlements meeting the requirements of villages except that residents are not permanent.

Indian Reserves

- The 134 Indian reserves occupy 1.5 million acres or 0.9% of the total provincial land area.
- About 30,000 people live on Indian reserves.

Other Settlements

- Hamlets are settlements smaller than villages. There are about 450 hamlets in the province.
- There are 36 Hutterite colonies in the province with a population of about 2,600. Hutterite colonies occupy 327,000 acres or about 1% of the total arable agricultural land in the province.
- There are some 260 summer resorts in the province.
- There are more than 50 unincorporated settlements in the Northern Administration District.

Table 1

POPULATION TOTALS: REGINA AND SASKATOON, 1911-77

	Regina	Saskatoon	Saskatchewan	% of provincial population in the two cities
1911	30,213	12,004	492,432	8.6
1931	54,209	43,291	921,785	10.6
1951	71,319	53,268	831,728	15.0
1961	112,141	95,326	925,181	22.4
1966	131,127	115,892	955,344	25.9
1971	139,469	126,449	926,242	28.7
1977	157,059	138,376	961,526	30.7

What legislation pertains to settlement lands?

The legislative acts that directly affect land use in settlements in the southern half of the province are The Urban Municipality Act, The Rural Municipality Act, and The Planning and Development Act. In the northern half of the province, The Northern Administration Act is the legislative authority for settlement lands.

In 1908, the province established a system of local government. Separate statutes provided for the incorporation and administration of rural and urban municipalities. **The Urban Municipality Act** and **The Rural Municipality Act** provide statutory powers and responsibilities to the respective municipalities. Other statutes such as The Public Works Act and The Planning and Development Act assign specific powers and duties.

The Planning and Development Act is the most important legislation respecting the use of land in settlements, and is the authority for development and control of land use planning on private or public lands in both urban and rural municipalities. This Act enables a council to appoint a **municipal planning commission** to advise and assist local council on all matters pertaining to planning and orderly development of the municipality. It enables councils to prepare **municipal development plans** and **zoning bylaws.** All new subdivisions of land must comply with this Act and its regulations.

Under The Act two or more municipalities may establish a **planning district** and appoint a planning commission to oversee the preparation of a district development plan or a district zoning bylaw.

Zoning bylaws now exist in about 70 rural municipalities and planning districts. In addition, about 125 cities, towns, and villages have enacted zoning bylaws. A zoning bylaw is a set of regulations regarding land use which enables a municipality to control development and the future use of land in the municipality. A zoning bylaw cannot change the existing use of land. At the time of approval of a development plan or a zoning bylaw, the existing use of land or a building may continue even if it does not conform with the plan or bylaw. If the non-conforming use is discontinued for six months or more, the future use of land must conform with the plan or bylaw. For example, if an area in an urban residential area is rezoned to allow commercial development, residences can still exist in that area. However, the bylaw would also allow commercial development. If a rural municipality identifies an area as agricultural land, a commercial enterprise or residence, resort park or trailer park which existed prior to the adoption of the zoning bylaw may continue but not expand.

A council can obtain interim control if it intends to prepare a zoning bylaw or municipal development plan. Any proposed development must then receive written permission of the council which enables the council to regulate development.

Who administers settlement land?

In the southern half of the province, the Department of Municipal Affairs administers The Urban Municipality Act, the Rural Municipality Act and The Planning and Development Act. Many of the administrative responsibilities have been delegated to local governments or special commissions as set out in these Acts.

There are 299 rural municipalities. Each of these has a municipal council which administers The Rural Municipality Act and any relevant bylaws of the municipality. Urban municipalities are set up in incorporated settlements with an elected council which administers the area under The Urban Municipality Act. One rural municipality may surround several urban municipalities, and one urban municipality may be adjacent to several rural municipalities. However, jurisdiction does not overlap. Where special circumstances justify it, several municipalities, or parts thereof, may be declared a **special planning area,** with a commission set up to decide on land use issues. This approach is being used in the Qu'Appelle Valley where six special planning areas, each with its own commission, have been established.

In the northern half of the province, settlement lands are administered under **The Northern Administrative Act** by The Department of Northern Saskatchewan. Incorporated settlements are administered by a local council in the same manner as in the south. The remainder of the area has been divided into five districts; each elects a member to form the Northern Municipal Council. At the present time, eight settlements have a Local Community Authority, which functions much like a village council in the south. Other settlements have established Local Advisory Committees, which advise the Northern Municipal Council regarding issues in their communities. A number of northern settlements are considering incorporation.

How are settlement lands used?

Larger urban centres develop around a central business core — the "downtown". Commercial businesses and light industries predominate here; land prices are high and residential use is low. This type of use may also extend outward in strips along the main traffic arteries.

Surrounding or adjacent to this area is the older, higher density, residential zone. Parks and institutions such as schools may also be scattered throughout the area. This area is joined to the newer, lower density residential area — the "suburbs".

Where the settlement meets the rural area is a zone referred to as the "urban fringe". This is often characterized by patchwork development which is largely outside the area controlled by urban zoning restrictions. In some centres, heavy industry is located here.

The urban influence around our larger centres can extend for miles, as many workers from the city choose to live in the country and commute to the city for work. This area, referred to as the "urban shadow", contains the rural residential developments, hobby farms, and trailer parks, and may be used by city residents seeking outdoor recreation.

In smaller urban settlements, there is usually a mix of commercial and residential development. Newer residential areas develop on the perimeter of the settlement.

A network of roads and alleys, sewer and water lines, and utilities runs throughout settlements. Green spaces may occupy large areas, especially where the topography or other landscape features do not permit other developments.

What are some of the problems associated with settlement lands?

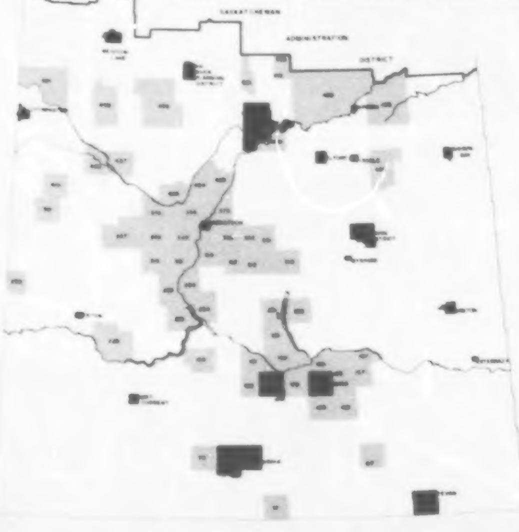
Urban Settlements: Many of the problems associated with settlement lands are the result of movement of people from rural areas and smaller settlements to larger urban centres. This rural to urban shift has resulted in the concentration of the population in urban centres of 1,000 or more people. The three largest centres, Regina, Saskatoon, and Moose Jaw, contain over 60% of the urban population and more than 34% of the provincial population.

Problems related to this movement include: increased demand for land and services in the larger centres; urban fringe development problems; increased demand for open space for recreation; and a decreased level of services in smaller centres.

As a settlement grows, the land acquires an increasing value because of its limited supply, intensive use, and its potential for generating revenue. Within the city there is a pressure to convert older business and residential areas to high density commercial and residential developments. More efficient use of the land in the cities can reduce the amount of new land that must be annexed. Urban renewal projects can provide additional space and new uses for land, but often at the expense of those people now using the land.

One of the uses of land considered wasteful is the development of low density suburban residential areas which require large amounts of land, are expensive to service, and require the automobile for transportation. This in turn puts further pressure on downtown areas to provide parking and additional roads to accommodate the increased traffic flow.

MUNICIPALITIES
WITH
ZONING BYLAWS
JUNE 1979


☐ RURAL MUNICIPALITIES WITH ZONING BYLAWS
● PLANNING DISTRICTS WITH ZONING BYLAWS
NORTHERN
SASKATCHEWAN
ADMINISTRATION
DISTRICT

Urban Fringe: On the urban fringe, development may occur in a haphazard, poorly planned way if the area outside the city is not controlled by zoning bylaws. Another controversial issue associated with urban fringe development is the conversion of prime agricultural land to urban uses. The amount of land annexed by urban centres has increased dramatically in recent years (see Tables 2 and 3). While this problem is not as serious in Saskatchewan as it is in other areas of the country, many people consider this to be an unwise use of land because it removes prime agricultural land from production and is an irreversible process.

It has been suggested that where possible, future growth should take place on lands poorly suited for agriculture (C.L.I. Class 4-7 lands). For example, land annexed to Saskatoon and Regina is generally highly productive. However, there is land in proximity to these centres which is less productive for agriculture but suitable for urban development. Problems sometimes associated with developing this land include cost of servicing and providing access routes to the city centre.

It has been argued that the amount of agricultural land lost to urban development is less than the amount of land brought into production each year. However, the productivity of the land lost is much higher than that of land brought into production.

In addition to the losses through annexation, land is taken out of production by rural subdivision for country residences. Although provincial figures on the amount of land subdivided are not available, 64,000 acres have been subdivided in the Saskatoon area alone.

Other problems are caused by subdividing land for these uses. There is evidence to suggest that rural residential development can cause social and economic disruption in a rural community. The rural tax structure of the province does not make allowance for rural residential development with the consequence that such developments do not bear a tax return equal to the cost of providing services. For example, a farmer being taxed on his land holding may be paying more in taxes than other rural residents. However, his demand on services, such as education and road access, may be less than the urban-oriented rural resident. A sudden influx of new residents may mean that the previously adequate school facilities need expanding which results in an added tax burden ot the community as a whole. In addition, the urban-oriented resident likely requires an all-weather access road to enable him to get to work. This means upgrading the road surface and providing a snow removal service which again adds to the expenses of the total municipality.

Because of these tax and service inequities, social conflicts can arise between the rural and the urban-oriented residents. Rural residents have expressed the fear that eventually urban-oriented people will dominate council and increase the tax rate to levels that farmers cannot afford. In contrast, many urban-oriented residents feel that their concerns receive unsympathetic attention from the present day rurally-dominated councils.

Table 2

ANNEXATION RATES IN SASKATCHEWAN 1973-77	
1973	1,500 acres
1974	4,400 acres
1975	8,000 acres
1976	16,000 acres
1977	33,000 acres*
Total	53,900 acres

* If all applications were approved.

Table 3

ANNEXATION RATES, SASKATOON AND REGINA

	Regina	Saskatoon
pre-1966	23,672	15,585
1966-68	1,394	938
1969-71	530	2,741
1972-74	2,763	441
1975-77	977*	3,864
Total	29,336	23,569

* Regina is currently proposing to annex an additional 16,200 acres.

Rural Settlements: The shift of population to larger centres has also resulted in problems in smaller centres. Services such as schools, medical facilities, and commercial businesses are difficult to maintain because of the decreased population and tax base, and better access roads to larger centres.

Hazard Lands: Inadequate consideration of environmental factors has led to problems in settlement planning. In many areas development has occurred on "hazard lands" such as those prone to flooding, on unstable slopes or on land with a high water table. Periodic flooding, erosion of slopes, and shifting soils create problems which are expensive to repair. Substantial expenditures for diversion channels or slope stabilization are sometimes required to solve these problems.

Recreational Land: Traditionally, settlements have provided facilities for jobs and housing but have not provided adequate space for recreational activities. A balance is required between green space for recreation and other land uses.

The increased demand for rural land for recreational activities such as hunting, snowmobiling, and cross-country skiing has led to conflicts with landowners who are concerned about personal safety, property damage, and livestock injury. Uncontrolled development of cottages on leased land adjacent to lakes also creates problems. The cottage developments may not meet requirements to qualify for subdivision and may also occupy shorelines thus reducing the opportunity for public access for recreation.

Land Speculation: Land speculation has been accused of contributing to or causing land use problems in and around our settlements. Speculation results from an imbalance between supply and demand, and implies a holding of land for financial gain.

Critics of land speculation claim that it causes an inflation in land prices above the price justified by agricultural uses, thus making it difficult for legitimate farmers to acquire land. It also results in windfall profits when the land is serviced by public money. They also point out that land bought for speculative purposes may be idle for many years.

The speculative gains on lot prices in Regina and Saskatoon in 1972-73 were estimated to be about 20%, much less than in other cities of the country. It has also been stated that speculation does little to raise the cost of land for housing unless there is monopoly control of available land.

Alternatives to land speculation that have been raised range from total public ownership of all land, public land assembly (land banking), land price controls, a land speculation tax, and regional planning.

An example of control of land prices has occurred in Saskatoon. The city established a land banking policy in the 1930's. Under this policy, the city acquired the land necessary for growth and offered it to developers under a lease-option arrangement which prevents the holding of vacant land for speculative purposes.

Some of the questions that need answering are: Is land speculation a land use issue? Is it a problem in Saskatchewan? What is land speculation and what is excess profit? Would any of the suggested alternatives work or would they further contribute to the problems?

Guidelines for Use of Settlement Lands

The following guidelines were approved by delegates attending Land Use Workshop II.

Philosophy:

1. Develop a regional growth policy which would rationalize rural-urban growth patterns.
2. Reduce rural depopulation.
3. Encourage urban decentralization through limiting growth of major urban centres.

Objectives:

1. Provide for urban green spaces and recreation lands.
   - encourage inter-community co-operation for the supply of services.
   - develop alternative for land servicing.
   - encourage municipalities to develop a classification plan to identify land requests for schools, neighbourhood parks, etc., in order to promote more orderly development.
   - encourage development of recreation facilities for urban needs consistent with a proper land use policy.
2. Develop more effective use of land utilized for transportation.
3. Make more effective use of urban land by emphasizing urban renewal in the central core.
   - better design of urban subdivisions thereby reducing sprawl.
4. Wherever practical agricultural land used for settlement should be C.L.I. classes 5, 6, and 7.

Additional Reading

Canada Department of Urban Affairs. 1977. *Human Settlements in Ottawa, Canada.*

City of Regina. 1977. *Regina RSVP — a Planning Strategy for Regina.* Planning Department, Regina.

Jackson, C. I. (Ed.). 1975. *Canadian Settlements — Perspectives. Urban Prospects* Series. Minister of State for Urban Affairs, Ottawa.

Richards, J. H. and K. I. Fung (Eds.). 1969. *Atlas of Saskatchewan.* University of Saskatchewan, Saskatoon.

Saskatchewan Departments of Municipal Affairs and the Environment. 1973. *Proceedings of the Seminar on Urban Fringe Development Problems.* November 15, and 16, 1972. Regina.

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FACT SHEET 13

Land Use In Saskatchewan

Land Use Policy Committee
1978

UTILITY LANDS

Saskatchewan, like the other provinces in Canada, is faced with resolving present and potential land use conflicts. As we continue to modify the land, choices must be made as to how we can most wisely use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet presents information on utility lands.

What are utilities?

Utilities are defined as public service businesses or organizations that are subject to special government regulations. They include electrical and gas, pipeline, communication, transportation, and sewer and water systems. Although utilities are both publicly owned (e.g. Saskatchewan Power Corporation, Sask Tel) and privately owned (e.g. Canadian Pacific Railways, most radio and TV stations), they are all subject to special regulatory bodies, such as the National Energy Board or the Canadian Radio and Television Commission.

Major Utilities in Saskatchewan

Federal Government Owned or Operated

- Canadian National Railways (CNR)
- federal airports
- Canadian Broadcasting Corporation (CBC)
- postal service

Provincial Government Owned or Operated

- provincial highways
- Saskatchewan Telecommunications (Sask Tel)
- Saskatchewan Power Corporation and its subsidiaries, North-Sask. Electric and Many Islands Pipelines (Canada) Ltd.
- Saskatchewan Water Supply Board
- provincial airports

Municipal Government Owned or Operated

- municipal airports
- municipal roads
- most sewer and water systems

Privately Owned and Operated

- Canadian Pacific Railways
- most pipelines (e.g. Interprovincial Pipe Line Company, Trans-Canada Pipelines, Westspur Pipe Line Company)
- most radio and TV stations

How do utilities use land?

Utilities require land for a number of purposes — reservoir sites for municipal water supply or power generation, sites for airports, communication towers, plant sites and office buildings, quarries for soil, sand, stone and gravel, and land for stockpiles and sewage lagoons. Transportation corridors for roads, streets, alleys, railways, pipelines, and transmission lines account for the greatest amount of utility land use.

Street and road allowances occupy about 1,237,800 acres in the province, or about 0.8% of the total land area. In some settlements, more land is devoted to streets, alleys, and railways than any other land use. For example in Elbow, streets and lanes occupy 25% of the developed land, railway and industry 23%, residential area 15%, recreational land 14%, schools 5% and agriculture 5%. In Regina, oiled and gravelled streets and lanes occupy about 3,300 acres or 14% of the developed land area. Railway mainline rights-of-way and railway yards, excluding industrial spurs and servicing leads, occupy about 660 acres or 2.8% of the land area.

Airports also use large land areas adjacent to our cities. At Regina, the airport occupies some 1,300 acres and at Saskatoon about 2,000 acres.

Although the actual acreage involved in right-of-way corridors in the province has not been calculated, the following figures give an indication of the extent of these networks.

There are, in Saskatchewan, some:

- 128,720 km of electrical distribution and transmission lines, about 8,000 km are transmission lines which carry at least 72 kilovolts (kV)
- 32,200 km of buried telephone cable
- 21,900 km of provincial highways and federal roads
- 180,200 km of municipal roads and streets
- 13,700 km of railroad main line track
- 12,870 km of natural gas pipeline
- 8,000 km of oil pipelines
- 185 km of Saskatchewan Water Supply Board pipeline (SWSB)
- 145 km of SWSB canals
- 300 telecommunications microwave towers
- many additional miles of sewer and water pipelines
- 38 licensed airstrips and 22 licensed sea plane bases; and about 130 unlicensed municipal airstrips and 200 privately-owned airstrips.

Provincial highways occupy about 248,000 acres of land in Saskatchewan. Municipal roads and streets occupy about 990,300 acres. The 1.2 million acres covered by roads represent 0.8% of the area of the province.

Strip mining of coal for thermal power plants also requires land. About 10,000 acres have been mined in the Estevan area to-date. About 5,000 acres will be mined in the Coronach area during the proposed life of the plant.

Some of the lands used for utilities can be returned to a productive use after the utility is installed (e.g. pipeline and transmission line right-of-way in cultivated areas). Other land will be used permanently for the utility (e.g. reservoirs, roads and airports). Much of the land mined for coal can eventually be reclaimed for other productive uses.

What are some of the problems and conflicts which arise from utility land use?

People demand more electricity, faster and more efficient transportation, and modern amenities such as telephone, television, water and sewers. Utilities are designed to serve public needs and to meet demands. Utilities are usually built with public moneys and the costs are considerable. For example, one kilometre of four lane surfaced highway costs over 350,000 dollars. A kilometre of 230 kilovolt (kV) transmission line costs as much as 60,000 dollars. Therefore the shortest possible distance is a major factor in locating corridors. Suitable locations for reservoir sites and supplies such as coal and gravel are sometimes limited. These factors lead to a number of problems.

Land required for utilities is often in some other use. Conflicts arise over the use of the land. The socio-economic and environmental effects of construction and operation of utilities lead to conflicts with other land use interests.

Agricultural lands are lost to utilities such as roads, reservoirs, and coal mines. For example, an estimated 15,000 acres of largely agricultural land in the Coronach area is required for the Poplar River Power Project. New roads or canals can divide farms, and transmission lines leave numerous poles to farm around, adding to the expenses of the farmer. Water that could be used for irrigation may instead be allocated for power generation.

Fish and wildlife lands may be lost to utility developments such as reservoirs. Fish migrations may be blocked by dams or spawning areas destroyed by road and pipeline construction. Water may be polluted by sewage disposal or construction activities. Sensitive species may be disturbed by construction and maintenance activities along pipelines and transmission lines. Large numbers of animals are killed by trains and cars; birds fly into TV towers and powerlines and power poles.

Recreational lands may be lost to utility developments. Construction of a large reservoir may change the nature of the recreational activity. For example, an area suitable for canoeing and hiking may be changed to a boating area by a reservoir. The wilderness aspect of an area can be destroyed by new roads or by right-of-way corridors. Recreational waters can be polluted by sewage discharges and by erosion from poorly designed utility projects such as roads and pipelines.

Heritage sites, such as archeological sites, may be destroyed by utility developments such as dams and roads.

Settlement patterns and development are largely influenced by the availability and location of utilities such as airports, sewage lagoons and roads. Costs of land and housing are determined by service costs. Residential areas may be removed for new roads. Locating a major utility development, such as the Nipawin or Poplar River Power Projects, near a community has wide-ranging socio-economic impacts. Abandoning a rail-line can influence the commercial activity in a community.

Forest lands are flooded out by hydro reservoirs, such as the Squaw Rapids Dam, or are cleared for transmission lines and road corridors.

The future of our settlements, our economy, and our lifestyles is closely tied to the availability and location of our utilities. Careful planning is needed if these problems are to be resolved.

Guidelines for Utility Lands

The following guidelines for utility lands were approved by delegates attending Land Use Workshop II.

Philosophy:

1. Need to achieve a conservation and wise-use philosophy in the utilization of all our resources and the lands upon which they are based.
2. Prior to development of utilities there should be a detailed study of environmental, social, cultural and economic ramifications and need for the life expectancy of the utility, and these ramifications must be considered in the allocation of land for the provision of utilities.

Objectives:

1. Maximize the use of existing corridors for the provision of utilities such as railroads, highways, power lines, pipelines, etc.
   — co-ordinate future utility development through long-term planning.
2. Locate major utilities subject to the constraints listed under Philosophy #2 above.

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FACT SHEET 14

Land Use in Saskatchewan

Land Use Policy Committee
1978

Heritage Lands

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential land use conflicts. As we continue to modify the land, choices must be made as to how we can most wisely use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet focuses on heritage lands.

What are Heritage Lands?

A heritage is property that descends to an heir; therefore, heritage land is land that is set aside or preserved for future generations. Here, heritage land is defined as land which has been acquired to preserve, protect and/or interpret a significant aspect of Saskatchewan's natural or human history. Most of the heritage land discussed in this Fact Sheet is Crown land administered by government agencies. Organizations and individuals may hold title to land for the purpose of protecting heritage features. However, an inventory of these privately owned lands is not available and they are not addressed in this Fact Sheet.

Heritage land may be designated under a number of different legislative acts. As a result, a number of terms are applied to heritage lands. These include **protected areas, national historic sites and parks** and **protected property.**

Land areas which are designated primarily for other purposes may also have heritage features. These include areas such as **provincial** and **national parks, bird sanctuaries, provincial wildlife areas** (game preserves, wildlife management units, wildlife refuges), **wildlife development fund lands,** and **research and teaching areas.** Information on designated parks and wildlife areas is presented in Fact Sheet 8 — *Fish and Wildlife*, and Fact Sheet 9 — *Recreation lands.*

Protected Areas A total of 21 protected areas occupying about 48,000 acres have been designated under The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act (hereafter referred to as The Parks Act). These protected areas are administered by the Departments of Tourism and Renewable Resources and Culture and Youth.

The protected areas designated from 1954 to 1964 were of historical or archeological significance such as trail remnants, old fur trade posts, and North West Mounted Police posts. Many were designated to prevent unauthorized removal of objects of historical or archeological value. Most of the sites were roadside markers describing the history of the site.

Since 1964, designation of protected areas has placed a greater emphasis on natural or wilderness areas such as the Matador Grasslands, Waskwei River and Wildcat Hill Wilderness Area. Because these areas are protected for their natural history significance, they are larger than areas previously designated (see Table 1).

Some of the protected areas are associated with other designations. For example, the Bison Drive Site is within a PFRA community pasture. Steele's Narrows Historic Site contains a national historic site. The protected area at Touchwood Hills Trading Post is also designated as a recreation site.

Table 1
Protected Areas*

NAME	AREA (acres)	PURPOSE OF DESIGNATION
Anderson Island	1,800	preserve natural state of area
Besant-Midden Historical Site	37.8	archeological site
Bison Drive	40	archeological site
Cannington Manor	25	site of 19th century settlement
Fort Black	2.3	archeological site
Fort Carlton	340	historic site
Fort Pitt	25.4	Hudson's Bay Company post
Glen Ewen Burial Mound	14.7	archeological site
Gull Lake	160	archeological site
Hickson-Maribelli Lake	181	archeological site
Last Mountain House	145	former trading post
Maurice Street	422	preserve natural state of area (wildlife sanctuary)
Matador Grasslands	1,922	preserve natural state of area
Pine Island Trading Post	94	archeological site
Steele's Narrows Historic Site	40	historic site
Thomas Battersby Wildlife Protected Area	640	historic-natural site
Touchwood Hills Hudson Bay Company Trading Post	16.7	historic site
Walter Felt Site	2.9	archeological site (bison drive)
Waskwei River	2,240	preserve stands of virgin white spruce
Wildcat Hill Wilderness Area	40,077	natural wilderness area
Wood Mountain	13.6	historic park (North West Mounted Police Site)

* Protected areas are designated under The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act.

Provincial Historic Areas Nine provincial historic parks occupying about 640 acres of Crown land have been established to preserve and display areas of historical interest. Some of these are designated as protected areas under The Parks Act. Other historic parks are associated with land designations such as provincial forest or recreation sites. Table 2 lists the parks, their area, significance and land designation. Provincial historic parks are administered by the Department of Culture and Youth.

A total of 170 provincial historic markers have also been established. Most of these sites are small, usually less than one-tenth of an acre and usually consist of a roadside plaque which interprets an event that occurred at or near the site. In some cases, a plaque is mounted on a building and no land is involved.

Table 2
Provincial Historic Parks

NAME	AREA (acres)	SIGNIFICANCE	LAND DESIGNATION
Cannington Manor	25	site of 19th century settlement	Protected Area
Cumberland House	25	major fur trading centre; remains of a steamship used during 1885 North West Rebellion	Crown land
Fort Carlton	340	Hudson's Bay Company post	Crown land—contains Protected Area
Fort Pitt	25.4	Hudson's Bay Company post	Protected Area
Last Mountain House	145	former trading post	Crown land—contains Protected Area
Saint Victor Petroglyphs	10.4	aboriginal petroglyph site	Crown land
Steele's Narrows	40	site of last military engagement of 1885 rebellion	Protected Area
Touchwood Hills	16.7	Hudson's Bay Company post	Protected Area and Recreation Site
Wood Mountain	13.6	North West Mounted Police post	Protected Area

A number of provincial historic markers and sites are located in areas designated for other purposes such as provincial parks, regional parks, recreation sites, wildlife management units, games preserves, or national historic sites. Some examples of provincial historic sites are Chimney Coulee, Cypress Hills Geology, Diefenbaker Homestead (Regina), Emmanuel College (Saskatoon), Fort-a-la-Corne, Fort Walsh-Wood Mountain Trail, Indian Head Experimental Farm, Last Mountain Bird Sanctuary, Regina Air Terminal, Methodist Colony, and Stanley Mission.

National Historic Areas The federal government can establish national historic parks and national historic sites under The National Parks Act and The National Historic Sites and Monuments Act. National historic parks are areas which have both a major historical significance and a size suitable for development as a park with interpretive services. National historic sites may lack one of the necessary conditions or may be a potential park in the planning or developmental stage. National historic areas in the province are administered by Parks Canada of the Department of Indian Affairs and Northern Development.

Two national historic parks, Fort Walsh and Fort Battleford, have been designated in Saskatchewan. Fort Walsh National Historic Park, an area of 1,600 acres, depicts an early North West Mounted Police post. Two fur trading posts south of the Fort have been reconstructed. Fort Battleford National Historic Park, about 40 acres in area, also commemorates a NWMP post. Within the Park, buildings have been preserved and restored and interpretive displays have been erected.

Visitors examine a fur press at the reconstructed Fort Carlton. This Hudson's Bay Post, established in 1810 on the North Saskatchewan River, was a focal point of the fur trade handling supplies and furs by water and land.

Forty-three national historic sites have been designated in the province. In most cases, the land area involved is small and the majority of the sites consist of monuments and plaques. Of the larger sites, Batoche National historic site occupies 2,700 acres and contains vestiges of the confrontation between General Middleton and the Metis. The church, rectory and remains of the village of Batoche still stand. Fish Creek National Historic Site, about 130 acres in area, was the site of a major engagement between General Middleton and Gabriel Dumont.

Protected Property The Saskatchewan Heritage Act was passed in 1975 for the purpose of co-ordinating the orderly development, preservation, study, interpretation and promotion of appreciation of heritage property in Saskatchewan. Under this Act, the Minister responsible may acquire any heritage property by purchase, donation, loan, lease or any other means. The Act provides for the appointment of the Saskatchewan Heritage Advisory Board to advise the Minister on any matter relating to the conservation, protection, and preservation of the heritage of Saskatchewan. The Act is administered by the Department of Culture and Youth.

This Act defines heritage property as property, whether a work of man or nature, that is primarily of interest for its archaeological, historical, cultural, scientific, or aesthetic value. To date, no heritage properties have been designated under this Act.

Heritage property may be designated as protected property under the Act for the purpose of preserving or salvaging the property. The only protected properties designated to date are four buildings in Regina. These are the Land Titles Building, the Head office of the Saskatchewan Government Insurance Office, the Bank of Commerce Building (1736 Scarth Street), and the Legislative Building.

Other Heritage Lands Several research and teaching areas are leased by the Universities of Regina and Saskatchewan and the Canadian Wildlife Service for biological research and teaching which are dependent upon natural conditions. Therefore, the attributes of these areas are similar to the preservation and protection areas. These areas which occupy about 3,800 acres are listed in Table 3.

Artifacts excavated at the Walter Felt Protected Area near Mortlach indicate human occupation from 480 B.C. to 1700 or 1800 A.D. Pottery, bison bones and stone projectile points found in the top layers suggest this site could have been used as a bison drive.

Some areas considered significant because of the representative or unique vegetation and wildlife features are leased or owned by individuals and organizations. For example, the Regina Natural History Society owns an area of 320 acres in the Qu'Appelle Valley. This area is representative of the vegetation and wildlife features of the Valley. The Saskatchewan Natural History Society leases from DTRR 160 acres of Crown land in southwestern Saskatchewan with the objective of protecting the last remaining prairie dog colonies in Canada.

Areas which are considered significant because of the natural, geological or scientific features present have been identified as potential ecological reserves or natural areas by the International Biological Program. One hundred areas encompassing about 3.5 million acres were identified as potentional ecological reserves. Some of these areas are quite small. The size of the areas varies and depends upon the particular features considered worthy of protection. For example, Middle Quill Lake Islands is about 5 acres; an area at Moose Mountain is 17,000 acres; and at Lake Athabasca Sand Dunes 392,400 acres. The proposed ecological reserves include privately owned land, and provincial and federal Crown land.

Some of the proposed reserves are associated with lands designated for other purposes such as provincial parks, community pastures, bird sanctuaries, Indian reserves, and research and teaching areas. At the present time, there is no enabling legislation for ecological reserves in Saskatchewan. Some of these areas receive protection by the administrating agencies as they review proposed developments in and adjacent to the areas. For example, the Department of Northern Saskatchewan would consider the potential impact on the Athabasca Sand Dunes if developments were proposed for this area.

What are some of the problems and land use conflicts associated with heritage land?

The need for detailed planning and policies for heritage lands has only been recognized during the last ten years. As a result, procedures to designate, administer, and manage heritage lands are in various stages of development. Policies and management plans are required to resolve several important questions. Among these are: What heritage features should be protected? How can these features be protected? What land uses are compatible with protection of heritage features?

Several problems have arisen concerning the management of heritage lands. Protection of heritage lands is sometimes complicated because a number of agencies are involved in administering heritage lands. There are often conflicting viewpoints about the use and management of a heritage site. Identification and use of an area as a heritage site can conflict with the present land use or use of adjacent land.

Administration: The administration of heritage lands in the province is somewhat complex. The provincial Departments of Culture and Youth, Tourism and Renewable Resources, and Northern Saskatchewan are directly involved in administration of such lands. Other departments such as Highways and Transportation and Agriculture have a minor role. Federal heritage lands are administered by the Department of Indian Affairs and Northern Development.

In 1976, historic programs were transferred from the Department of Tourism and Renewable Resources (DTRR) to the Department of Culture and Youth. As a result, both departments have administrative responsibilities for protected areas. Some 32 historic sites are within provincial parks and recreation sites administered by DTRR.

Other administrative dualities also occur. For example, the Departments of Culture and Youth and Northern Saskatchewan administer heritage land in the Northern Administration District such as Cumberland House Historic Park. The Department of Highways and Transportation administers roadside turnoffs in which historic markers are located. Some heritage sites are located on land administered by the Department of Agriculture.

The presence of an historic plaque does not mean that the land is owned by the province. Only 77 of the 170 historic plaques are located on Crown land. Of these 77 sites, 15 are in the area administered by DNS, 10 are within provincial parks, 22 are in recreation sites administered by DTRR, and 22 are in protected areas declared by DTRR. Eight plaques are on provincial land but are not designated as protected areas. A large number of the plaques are on highway turnoffs, while others are in regional parks or on private property. Similarly, plaques identifying national historic sites are not necessarily on land owned by the federal government.

Table 3

Research and Teaching Areas

NAME	AREA (acres)	ADMINISTERING AGENCY	LAND DESIGNATION
Cypress Hills	642	University of Regina	within a provincial park
Strawberry Lakes	160	University of Regina	within a provincial community pasture
Matador Grasslands	1,922	University of Saskatchewan	Protected Area
Fairy Island	118	University of Saskatchewan	Wildlife Refuge
St. Denis	960	Canadian Wildlife Service	Federal Crown Land

In some cases, historic sites are identified by a plaque and monument located on private land by verbal agreement with the landowner. This has presented some problems when land ownership changes and the new owner demands to know the reason for the location of a monument on the land.

In the case of historical sites of local interest, the Department of Culture and Youth may supply the interpretive plaque but the monument is located and constructed by the citizens requesting the interpretation. As a result, the exact location of several sites is not known.

Designation of Heritage Land: Heritage lands which have been designated by legislation as protected areas, protected property, or national historic parks can be protected and preserved. Other heritage lands which are owned by individuals, organizations, corporations, or municipalities are only indirectly controlled by legislation. The use of these sites and the consequent degree of protection of heritage features is the responsibility of the landowner.

Problems arise in protecting areas which are considered to have heritage value but which are not designated. For example, historical buildings, archeological sites or natural areas may be threatened by urban redevelopment, land clearing, recreational developments, or highway construction. Although recommendations can be made to protect heritage features, no legislative authority exists to regulate the threatened area as heritage land. In some cases, significant features of Saskatchewan's heritage may inadvertently be destroyed because of inadequate inventory or knowledge of an area.

Management and Use of Heritage Lands: The main purposes of heritage lands are to preserve and/or protect significant features and to interpret these features for the visitor. In some instances, the need to preserve a site conflicts with the public's desire to use the site. For example, some archeological sites are not identified for public viewing because of the intentional or unintentional damage which could result. Restricted use may be allowed in some areas. For example, in the protected areas of Waskwei River, Maurice Street Wildlife Sanctuary and Wildcat Hill Wilderness Area, vehicle access is restricted to preserve a wilderness setting. Development is limited to hiking trails and primitive campgrounds and no commercial development is allowed.

Conflicts can occur in deciding what land uses should be allowed on a heritage site. For example, the Touchwood Hills Provincial Historic Park is designated as a protected area. However, the site has also been designated as a recreation site which allows development of recreation facilities. The designation for recreational purposes could conflict with the objective of historical preservation and interpretation. Designation of heritage land may pre-empt other uses such as hunting or forest harvesting. In some cases, these uses might be permitted in order to maintain healthy animal populations or a desired vegetation community.

The use of heritage land by visitors may indirectly affect the use of adjacent land. Increased traffic to a heritage site may cause problems for adjacent landowners. On the other hand, an increase in the number of tourists may benefit local communities.

As the number of visitors to heritage areas increases and demands for other land uses increase, the problems and conflicts will become more numerous. Careful land use planning and management is required to resolve problems associated with heritage lands and to ensure protection of significant features of Saskatchewan's heritage.

Guidelines for Heritage Land

The following guidelines were approved by delegates attending Land Use Workshop II.

Philosophy:

1. To preserve good representative examples of the Saskatchewan landscape.

Objectives:

1. Recognize the need for historic and archeological sites, wildlife sanctuaries and sites for environmental education and research.
   – development mechanisms to encourage public input into designation of heritage sites.
2. Establish a system of ecological reserves to ensure the preservation of viable populations of all native plants/animals.
   – ensure that owners of land selected for heritage sites receive adequate compensation.

Additional Reading

Department of Culture and Youth. Historic Booklets: Fort Carlton Historic Park, Cannington Manor Historic Park, Wood Mountain Historic Park, Last Mountain House Historic Park, Fort Pitt Historic Park, Cumberland House Historic Park. Available from Museum of Natural History, Albert Street and College Avenue, Regina, Saskatchewan, S4P 3V7.

Hanna, Margaret G. 1976. *The Moose Bay Burial Mound.* Anthropological Series No. 3. Saskatchewan Museum of Natural History.

International Biological Programme. 1976. *Natural Areas in Saskatchewan.* (Summation Report of the Saskatchewan Natural Area Survey). Available from Department of the Environment, 5th Floor, 1855 Victoria Avenue, Regina, S4P 3V5.

Saskatchewan Department of the Environment. 1976. *Designated Land Areas in Saskatchewan.* 117 p.

Saskatchewan Department of the Environment. 1977. *Land Use in Saskatchewan.* 192 p.

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FACT SHEET 15

Land Use in Saskatchewan

Land Use Policy Committee
1978

WASTE DISPOSAL LANDS

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential conflicts relating to land use. As we continue to modify the land, choices must be made as to how we can most widely use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet focuses on waste disposal lands.

Satisfactory waste management is becoming more difficult as wastes become more plentiful and more complex. Often we adopt an "out-of-sight, out-of-mind" attitude. Once the wastes leave our homes or businesses, we usually give little thought to their disposal. We are generally not critical of the methods of managing wastes until the lack of good management has produced intolerable conditions. For example, dumping of chemicals and nutrient-rich sewage into lakes and streams can cause polluted water bodies no longer fit for recreational swimming and fishing. Soil, unknowingly contaminated with radioactive particles, has been used for landfill at construction sites. Mercury levels present in fish pose a threat to health. These examples illustrate that a carefully planned and controlled system is required for the collection, transport, treatment and disposal of wastes.

Kinds of Wastes

A wide variety of terms are used to describe waste material — garbage, litter, junk, trash, sewage, agricultural and industrial refuse, smoke, and smog — depending upon its origin. In Saskatchewan, an estimated three pounds of garbage per person is generated each day. This amounts to about 500,000 tons per year for Saskatchewan residents. These figures include home, commercial, and city garbage and refuse but not industrial waste.

This refuse dump at a cottage resort area illustrates the need for controlled disposal and treatment of garbage.

Waste Disposal

Municipal solid wastes from homes, schools, businesses, and some industries are generally collected by a municipal service. These wastes are transported to a dump, a landfill or an incinerator for disposal.

In a sanitary landfill, successive layers of waste and dirt are put into a pit or trench and compacted. The dirt cover keeps the waste in place and controls odours, fires and rodents. A separate area is required at a landfill site for materials such as rubble and toxic wastes which are not suitable for inclusion in the landfill.

Information on the total area used in Saskatchewan for landfills is not available. The amount of land required for a landfill depends upon the community's population, the depth of waste and the number of years of use. In addition to the actual landfill area, land is required for a buffer zone and for road access. Excluding a buffer zone, a land area of about three acres could serve as a landfill for 100 people for 10 years. A population of 10,000 would require an area of about 18 acres over a 10 year period.

Incineration involves burning waste material at high temperatures. Waste is reduced to about 10 per cent of its original volume and the ash is disposed of in a landfill. Incineration is only suitable for larger populations because of the high cost of installing an incinerator. Only two Saskatchewan cities, Weyburn and Regina, use incineration for disposal of some of their wastes.

As an example of a municipal solid waste disposal system, the City of Regina operates a shredder, an incinerator and a landfill. Residential garbage and refuse is shredded or incinerated prior to landfill disposal. An estimated 198,000 tons of municipal, construction and industrial waste were handled by incineration and/or landfill in 1977. Total area for the landfill is about 200 acres. With present disposal methods this area could serve as a landfill over a 30 year period.

Municipal Sewage: In most Saskatchewan communities, liquid wastes are collected by a sewage system which drains into a lagoon. Sewage is about 99.5 per cent water. Breakdown of the organic solids by bacteria occurs in the lagoon and the effluent is usually discharged into a stream, river or lake.

About 450 centres in Saskatchewan with a total population of 400,000 people are served by municipal sewage lagoons. These lagoons occupy a total of about 3,000 acres of land. The land area required depends upon the size of the population. For example, a one or two cell lagoon to serve a smaller centre might occupy about three acres. The five cell lagoon system which serves Regina occupies about 350 acres. This area includes the lagoon and associated land used for access, buffer area, and piling sludge removed during lagoon cleaning.

Residences such as farms and cottages which are not serviced by municipal systems usually have their own solid waste piles and septic tank systems.

Industrial Wastes: Wastes from potash mines are held in brine ponds and salt tailings are stockpiled. Of the 10 operating potash mines in Saskatchewan, the smallest area used for brine ponds and salt tailings is 185 acres. The largest mine operation uses an area of 960 acres. Total land area for waste disposal from the 10 mines is 4,900 acres.

To mine mineral ores from open pits, overburden must be removed to reach the ore body. The quantity of overburden varies with the depth of the mineral ore. Some of the overburden is used to construct roads and plant sites. The rest is stockpiled. An estimate of land used for overburden disposal is not available.

Coal mining operations in southeastern Saskatchewan have in the past left much of the overburden in piles at the mining sites. Some of these sites will be mined again and levelled. Reclamation of mined areas is planned in future operations. Approximately 11,000 acres have been strip mined for coal. At the present rate of production, about 300 acres are mined each year.

No estimate is available of acreage used for overburden removed in sand and gravel operations. Sand and gravel excavations are usuually left "as is" and not reclaimed.

In addition to overburden, separation of minerals from the ore leaves large quantities of tailings. Some tailings are deposited in water bodies where suspended materials settle out. As water passes from one water body to another, wastes are gradually removed and diluted. Tailings from the two producing uranium mines and two former producers occupy about 400 acres. At the base metal mining operation in the Creighton-Flin Flon area, eight small ore bodies have been mined out; six other ore bodies are currently being mined. Land area used for disposal of tailings from these operations is about 625 acres.

Pulp and paper companies produce both solid and liquid wastes. At the site of the Prince Albert Pulp and Paper Company, liquid wastes are neutralized and receive primary treatment and aeration prior to disposal in the river. Sewage lagoons and associated land occupy about 300 acres. About 90 per cent of the solid wastes are burned to produce steam used in the plant. At the present rate of production, the present landfill area of 160 acres could be used for a period of 10 years. As use of wastes becomes more economical and technology improves, a greater percentage of the wastes may be burned.

Toxic chemicals such as mercury, lead, acids and alkalis, oil wastes from oil refineries and other by-products from industrial processes require special handling. At the present time, there is no inventory of the quantity and means of disposal of toxic chemicals and other hazardous wastes in the province. Some communities have a separate pit at landfill sites for receiving liquid wastes.

Agricultural Wastes: Agricultural wastes include crop refuse, animal wastes, and leftover chemicals and chemical containers.

About six pounds of waste are produced for each pound of vegetable product. Refuse from garden produce is usually worked back into the soil. Recent improvements in machinery, such as straw choppers, enable more efficient use of crop refuse. Straw can be baled or worked back into the soil.

Large quantities of animal manure are generated in the production of food. For example, over one ton of manure is produced in supplying each Canadian with his annual beef diet. A similar situation exists for other food products — three pounds of manure for each pound of milk and six pounds of manure per dozen eggs.

The traditional disposal method of spreading manure on the land remains economically feasible in Saskatchewan for several reasons. Improved storage and handling equipment enables efficient disposal, and the cost of using manure as a source of fibre and fertilizer is competitive with commercial fertilizer. Land may be required for stockpiling manure over a relatively short time period.

Leftover herbicide and pesticide chemicals and their containers require disposal areas on farms to prevent contamination of soil and water bodies.

How is waste disposal regulated?

Provincial legislation dealing with public health places responsibility for waste disposal on the local administration but requires that the operations be carried out in accordance with regulations under The Provincial Health Act. The Rural Municipality Act and The Urban Municipality Act enable municipal councils to regulate waste disposal. Waste disposal systems are also subject to approval under The Department of the Environment Act.

The Mineral Resources Act regulates the deposit of mining wastes and by-products on land or in water bodies. The Pollution by Livestock Control Act regulates waste disposal from intensive livestock operations. The Pest Control Products Act relates to disposal of pesticides and containers. The Litter Control Act aminístered by the Department of the Environment prohibits abandoning wastes on any land owned by another person, Crown land, or water. The Scrap Vehicles Act relates to gathering and disposal of scrap vehicles in the province.

Disposal of liquid wastes is regulated under a number of the above acts. In addition, Water Pollution Control Regulations under The Water Resource Management Act specify requirements for approval of sewage works and effluent disposal. The Oil and Gas Conservation Act regulates and makes provision for disposal of water, brine sediment and other field wastes. The Ground Water Conservation Act is aimed at preventing pollution and contamination of ground water.

Responsibility for the co-ordination of all provincial pollution control programs is assigned to the Department of the Environment by The Department of the Environment Act.

What land use problems and conflicts are associated with waste disposal?

Land use problems associated with waste disposal centre around two major areas of concern. First, conflicts occur over the location of waste disposal areas and the amount of land required. Secondly, problems occur in handling wastes to ensure that they do not cause health, safety, and aesthetic problems.

As the quantity of wastes increases, more land area is required for disposal and thus removed from productive uses. Some disposal lands such as municipal and industrial waste lagoons remove land from other uses for a long time period. Other disposal lands can be reclaimed for subsequent uses in a relatively short time period. For example, landfill sites can be used for recreation or other less intensive activities. However, landfills are not suitable for building sites because they require extensive and expensive foundation preparation to prevent structural failure in the buildings. Extensive collection and disposal systems may also be required to prevent hazards posed by the methane gas produced by decomposing wastes. Mined areas can be reclaimed for subsequent use although they may not always be returned to uses present prior to mining operations. Land used for stockpiling industrial by-products may be reclaimed in the future as uses are developed for the stockpiled materials.

Effluent from municipal sewage lagoons is added to the already nutrient-rich streams and lakes of southern Saskatchewan. These water bodies often become unsuitable for fishing and recreational swimming.

Locating waste disposal areas poses several problems. Adequate land area is required to prevent encroachment of settlements. Sites must also be located at an adequate distance from residential and commercial development to control odour and litter problems. Physical requirements also place constraints upon location of waste disposal areas. For example, a lagoon requires a surface water body to receive the effluent; landfill sites require soils which will contain the waste and prevent leachates from flowing into ground water or surface waterbodies.

Problems arise in handling wastes to ensure that they do not contaminate air, soil, and water. Methods of solid and liquid waste disposal rely heavily upon biological action in soil and water to decay and diffuse the wastes. However, wastes are produced in quantities which cannot be handled by natural processes. Therefore, we require a complex system to collect, transport and safely dispose of wastes. Problems occur at each of the steps in the system.

Disposal of wastes is regulated to prevent adverse effects upon other uses of land and water. In spite of regulations aimed at safe disposal, wastes are sometimes inadvertently disposed in soil and water without prior knowledge of the potential hazard. The problem is often recognized after wildlife or human health is affected. Sometimes wastes are purposely dumped in a location or in quantities which violate disposal regulations. This occurs when the owner considers the wastes a nuisance or their safe disposal as too costly.

Wastes As Resources

The statement, "We could drown in our own garbage", highlights the need for improved management of wastes. Reducing the quantity of wastes is important for two reasons. First, a reduced volume of wastes would reduce the land area required for disposal and alleviate the associated environmental and health problems. Second, recycling of wastes would reduce demands upon the land to produce additional resources.

Recycling of wastes is receiving more attention as we recognize that supplies of many resources, including energy, are limited. To successfully recycle materials requires a market for the material, an adequate supply, a collection and transport system, and the co-operation of the producers of the waste materials. Major problems faced in Saskatchewan in developing a recycling industry include: the cost of collection and separation of wastes; lack of local markets; instability of available markets; limited volumes and wide distribution of recyclable materials; and the fact that freight rates and industrial incentives favour use of new materials over recycled materials.

In spite of these problems, some recycling projects are under way in the province.

Scrap Metal: Elevator agents have been buying scrap machinery and metal and selling it to IPSCO for over 20 years. Operation Recycle has collected over 90,000 tons of scrapped vehicles during the last five years, and expects to collect 15,000 tons a year for the foreseeable future.

Paper: Over 150,000 tons of paper are discarded annually in the province. Of this, an estimated 16,600 tons is waste newsprint. Although total figures are not available, about 5,000 to 6,000 tons of newsprint are collected annually in several Saskatchewan centres. Most of this is used to manufacture cellulose insulation.

Glass: More than 37 tons of glass are discarded each day in Saskatchewan. About 290 million beer and soft drink bottles are sold annually; 83 per cent of the soft drink bottles and 93 per cent of the beer bottles are returned and reused. The 14 million liquor bottles and 75 million home containers sold annually are not recycled in any significant numbers. Canaspheres Industries Ltd. in Moose Jaw uses waste glass to manufacture glass beads which are used in paint for roadway striping. The company imports most of its waste glass from outside the province because there is no collection system in Saskatchewan. At the present time it is not economical to collect and transport waste glass in Saskatchewan.

Rubber: An estimated eight million pounds of recoverable scrap tires are available annually in larger Saskatchewan centres. Work is underway to establish an industry to convert waste tires to rubber crumb which has high potential in road surfacing applications.

Oil: Approximately 5.7 million gallons of lubricating oil are discarded annually in Saskatchewan. Some waste oil is collected in our larger cities and shipped out of province for use. However, there is not yet an organized system for collecting and transporting large quantities of waste oil.

Flyash: Flyash, a by-product of burning coal for power generation, can be used as a concrete additive. About 15,000 tons of flyash are sold annually. Research into use as a granular material for highway construction is continuing.

The technology required to recycle many kinds of wastes is available. However, the cost is a major deterrent. A change in our attitudes towards "use" of wastes and the increasing demand for and costs of processing natural resources will assist in resolving some of the problems associated with waste disposal.

Guidelines for Waste Disposal Land

The following guidelines were approved by delegates attending Land Use Workshop II.

Philosophy:

1. Waste disposal at production facility must be a basic element in production cost.
2. Accept the idea that environmental protection and conservation take precedence over economic consideration when irreversible and/or undesirable consequences may result.

Objectives:

1. Minimize land used for waste disposal by
   - encouraging recycling;
   - promoting continued research into waste technology;
   - encourage disposal of effluents (e.g. sewage from lagoons) as a method of irrigation on forage lands.
2. Before any area is allocated for waste disposal (excluding toxic chemicals and radioactive wastes), optimum waste treatment techniques for environmental protection and conservation must take precedence over economic considerations.
3. Before any area is allocated for disposal of toxic chemicals or radioactive wastes, totally safe management systems must be known and provided for regardless of economic considerations.

Additional Reading

Brandis, W. B. A. 1975. *Pesticides And Their Safe Use.* Canadian Agricultural Chemicals Association, 116 Albert Street, Ottawa, Ontario.

Canada Health and Welfare. 1973. *Handbook on Chemical Safety in the Aerial Application of Chemical Materials.* Cat. No. H31-1273. 132 p.

Energy, Mines and Resources Canada. 1978. *The Garbage Book — How to Save Money by Throwing Out Less.* 100 p. Available from The Garbage Book, Box 3516, Station C, Ottawa, K1Y 4G1 or Saskatchewan Environment, 5th Floor, 1855 Victoria Avenue, Regina, Saskatchewan, S4P 3V5.

Glass Containers and the Environment. 24 p. Available from Glass Container Council of Canada, Suite 1310, 67 Yonge Street, Toronto 215, Ontario.

Jacobs, H. and A. K. Biswas, 1972. *Solid Wastes Management — Problems and Perspectives.* Research Coordination Directorate. Policy, Planning and Research Service, Environment Canada. 290 p. + 67 p. Bibliography.

Ontario Research. 1978. *Canadian Waste Bulletin Exchange.* Sheridan Park Research Community, Mississauga, Ontario. This bulletin lists names and addresses of industries and the kinds and quantities of wastes which are available for purchase or exchange.

Pequenat, C. (Ed.) 1975. *Waste Recycling and Canadian Agriculture. Conference Proceedings: Commercial Uses of Wastes as Animal Feed.* Agricultural Economics Research Council of Canada, 203-100 Bronson Avenue, Ottawa. 253 p.

Saskatchewan Department of the Environment. 1977. *Water Quality Objectives.* 16 p.

Stewart, G. R. 1967. *Not So Rich As You Think.* Houghton Mifflin Co., Boston. 248 p.

Tomlinson, J. (Ed.) 1973. *Proceedings of the International Congress on Land for Waste Management, Ottawa.* The Agricultural Institute of Canada, Suite 907, 151 Slater Street, Ottawa, K1P 5H4. 388 p.

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FACT SHEET 16

Land Use in Saskatchewan

Land Use Policy Committee
1978

LEGISLATION AND LAND USE

Saskatchewan, like other provinces in Canada, is faced with resolving present and potential conflicts relating to land use. As we continue to modify the land, choices must be made as to how we can most wisely use this limited resource.

The Land Use Policy Committee is distributing a series of fact sheets to provide background information on land use and the land use policy development process in Saskatchewan. This fact sheet focuses on legislation as it relates to regulation of land use and related resources.

Most uses of land in Saskatchewan are based upon the presence of a natural resource. The resource might be soil suitable for cultivation, minerals which are in demand, a water body suitable for recreation, irrigation, or power generation, or an archeological or historical site which represents our heritage. The responsibility for administering land and its resources involves a large number of agencies including federal and provincial government departments, Crown boards, corporations, and municipal councils.

The purpose of this fact sheet is to provide information on administration and regulation of land use in the province. The fact sheet begins with a review of the early history of resource management because many of the land use patterns present in the province today are the result of early resource management. Present day administration of land is then outlined. Finally, some of the problems facing land use administration and policy formulation are identified.

The fact sheet does not pretend to supply correct legal interpretation of any legislation. The intention is to provide an overview of legislation.

Early History of Resource Disposal and Management

When the Province of Saskatchewan with its present-day boundaries was created in 1905, The Saskatchewan Act provided that control and administration of natural resources including minerals and Crown land remained with the federal government. From the time of purchase of Rupert's Land from the Hudson's Bay Company in 1870 until 1930, the federal government assumed power to legislate the disposal of public lands and the right to use and develop natural resources. Dispositions of farm land as well as timber, mineral and water rights were made during this time. Land grants were made to encourage railway construction. Land was also granted or sold to various land and colonization companies which acted as agencies in the settlement process. Of the 80 million acres of land then surveyed in Saskatchewan, approximately 95 per cent had been alienated by 1930.

The Natural Resources Transfer Agreement Act of 1930 transferred the control and administration of Crown lands and natural resources from the Canadian Government to Saskatchewan. Saskatchewan had to honour existing agreements relating to lands and minerals already made by Canada including those to railway companies and the Hudson's Bay Company. The province agreed to recognize established Indian Reserves and to set aside future additional lands to meet Canada's obligations under the Indian treaties. Jurisdiction over water was also transferred to the province. The management, use and other rights concerning fisheries were transferred to Saskatchewan, although Canada retained legislative jurisdiction. The Transfer Agreement also provided for financial compensation to the province to cover the period from 1095 to 1930.

The forerunners of present-day resource and land legislation and administration were established following the transfer of resources. The provincial Department of Natural Resources was established in 1930 to deal with the allocation, management and disposition of Crown land, and with forestry, water, mineral, wildlife, and fisheries resources. Many of the policies and programs initiated by the federal government during the dominion lands era were continued by the Department of Natural Resources. For example, the primary purpose of the Lands Branch operating under The Provincial Lands Act of 1930 was the disposal of Crown lands either by lease or by alienation of title to farmers.

As conditions changed, it became evident that changes in resource management were necessary. The drought and economic depression of the 1930's resulted in enactment of legislation which had a major influence on land use in Saskatchewan. The federal Prairie Farm Rehabilitation Act and The provincial Land Utilization Act of 1935 were aimed at rehabilitating and conserving large areas of prairie land. Programs were directed at soil conservation, water development and conversion of marginal lands from cultivation to pasture. Under these acts, over one million acres of marginal crop land were converted to community pastures.

During the 1940's, various marketing boards were established and government administrative changes were made. As it was recognized that the task of managing all natural resources could not be accomplished by one department, the Lands Branch was transferred from the Department of Natural Resources to the Department of Agriculture in 1947. The Department of Mineral Resources was formed in 1953. Water resource administration also came largely under the jurisdiction of the Department of Agriculture. The Water Resources Commission was established in 1964 to co-ordinate water resource management and use. These functions of the Commission were absorbed by the Department of the Environment in 1972.

Present Administration of Land and Related Resources
Federal-Provincial Division of Powers

The primary responsibility of administration of land and resources was assigned to the provinces by The British North America Act of 1867 and its amendments. The federal government has sovereignty over Indian lands, national parks, migratory birds, and the import and export of natural resources. The provinces have jurisdiction over public lands and forests, minerals, oil, natural gas, most recreational resources and non-migratory wildlife. Areas in which jurisdiction is shared by Canada and the provinces include agriculture, fisheries, and water resources.

Table 1
SASKATCHEWAN LAND TENURE

Type	Area (Square Miles)	Per Cent of Total
1. Privately-owned land, mainly agricultural	96,139	38.2
2. Federal Crown land other than National Parks and Indian Reserves		
PFRA	2,142	
National Defence	87	
Wildlife	11	
Sub-Total	2,240	0.9
3. National Park	1,523	0.6
4. Indian Reserves	2,170	0.9
5. Provincial Crown land other than Provincial Parks and Provincial Forests		
Department of Agriculture and Land Bank	13,076	
Recreation	300	
Sub-Total	13,376	5.3
6. Provincial Parks	1,836	0.7
7. Provincial Forests	134,416	53.4
TOTAL	251,700	100.0

Source: Saskatchewan Department of Tourism and Renewable Resources, *Saskatchewan's Forest Resources*, March 1974, p. 25.

The federal government influences land and resources management through various incentive and regulatory mechanisms such as the Agriculture and Rural Development Administration (ARDA) and the Department of Regional Economic Expansion (DREE), The Fisheries Act and The Migratory Birds Convention Act. The federal government administers some Crown land in the province such as National Parks, PFRA community pastures, Indian reserves, and other designated areas.

Provincial Administration of Land and Resources

Administration and management of land and its resources depends partly upon the resources which are present and partly upon the tenure or ownership of land. About 38 per cent of Saskatchewan's land is patented (i.e. privately owned). The remaining 62 per cent is provincial or federal Crown land (see Table 1).

Within certain limits the owner determines the use and management of patented land. However, the use of privately owned land is regulated by federal, provincial and municipal legislation and regulations. For example, a landowner does not usually own sub-surface mineral rights as most of these rights have been retained by the Crown. Water is a provincial resource and land under water bodies also belongs to the Crown. Therefore, water development projects are subject to provincial legislation and regulations. All wildlife is also a Crown resource whether it is on Crown land or privately owned land. As a result, management and control of wildlife populations on private land is subject to government regulation. Use of patented land must also comply with municipal zoning bylaws and municipal development plans.

Some Crown lands may be designated by statute for a specific purpose. For example, over 50 per cent of Saskatchewan is designated as provincial forest. A complicating feature is that although land is designated for a use, its use is not necessarily restricted by the designation. For example, designated forest land is also used for grazing and recreation. Similarly, land designated as provincial park land is not solely used for recreational purposes. Resource utilization activities such as timber production, oil and gas extraction, grazing and others may occur within park boundaries.

Responsibility for administration of Crown land is assigned to an agency depending upon the land use and the resource present. The provincial government departments which have a major role in management of land and natural resources are the Departments of Agriculture, Tourism and Renewable Resources, Mineral Resources, and Northern Saskatchewan. For example, the Lands Branch of the Department of Agriculture is responsible for administering over 9 million acres of provincial Crown land. These lands are classified for agricultural use and leased or sold to farmers or ranchers or assigned to community pastures and other community projects. The Department of Tourism and Renewable Resources is responsible for Crown land set aside for tourism, recreation, fisheries, wildlife, forestry and some heritage land. Although the Department of Mineral Resources does not administer surface Crown lands, it does administer disposition of subsurface mineral leases. The Department of Northern Saskatchewan administers all land and associated resources in the Northern Administration District.

Other provincial agencies that administer particular legislation or provide services may also hold titles to Crown land. For example, the Department of Highways and Transportation has title to rights-of-way for provincial highways, some gravel pits, stockpile areas, and equipment yards. Road allowances are also Crown land but they are controlled and managed by municipal councils. The Department of Municipal Affairs administers The Planning and Development Act which requires that developers of subdivisions set aside land for public reserve or dedicate a sum of money. This land which may be used for parks or other facilities is administered by the Department but usually managed by the local council. The Saskatchewan Power Corporation may acquire easements rather than title to land which is used as a utility corridor for transmission lines or natural gas pipelines.

Other provincial agencies are involved in regulation of land use although they do not hold title to Crown land. For example, the Department of Health administers legislation that regulates public utilities such as water supply and waste disposal. The Department of the Environment administers legislation relating to the use and management of water resources and air and water pollution control and land protection.

In this fact sheet, it is not possible to review all the acts, regulations, and agency responsibilities which have some influence on land use in Saskatchewan. Table 2 outlines the major acts that regulate the use and management of land and natural resources.

Local Government

Local government plays an influential role in land use in Saskatchewan through the authority delegated by the province under The Urban Municipality Act and The Rural Municipality Act. Under these Acts, municipal councils have authority to assess property for taxation purposes, license businesses and other uses, provide and regulate public services such as water and sewerage works, waste disposal sites, cemeteries, hospitals and airports, and control and manage public highways, roads, streets and lanes. The Urban Municipality Act allows for leasing or purchase of land for construction or expansion of public service buildings, amusement centres, and for demolition or removal of buildings. A rural municipal council may enter into an agreement with PFRA for projects relating to rehabilitation and land utilization.

The Planning and Development Act is the most important legislation respecting the use of land in settlements, and is the authority for development and control of land use planning on private and public lands in both urban and rural municipalities. This Act enables a council to appoint a municipal planning commission to advise and assist local council on all matters pertaining to planning and orderly development of the municipality. It enables councils to prepare municipal development plans and zoning bylaws. All new subdivisions of land must comply with this Act and its regulations. This Act enables two or more municipalities to establish a planning district and appoint a planning commission to oversee the preparation of a district development plan or a district zoning bylaw.

Table 2
Major Land Use and Resource Legislation in Saskatchewan

Land Use or Resource	Act*	Purpose	Administering Agency
Agriculture	The Provincial Lands Act	provides that provincial lands lying outside provincial forests, parks and protected areas are to be administered by Department of Agriculture. describes method whereby these lands may be sold or leased and reservations to the Crown of such matters as road rights, water, mineral and timber rights. describes methods by which rents and royalties may be recovered and lands repossessed by the province.	Department of Agriculture
	The Land Bank Act	to assist residents of Saskatchewan to establish or maintain family farms in Saskatchewan by increasing their opportunities of acquiring land for farming and disposing of their farm land at "fair and just" prices.	Saskatchewan Land Bank Commission
	The Saskatchewan Farm Ownership Act	restricts the amount of land to which non-residents and non-agricultural corporations may hold title.	Saskatchewan Farm Ownership Board
	The Agriculture Development and Adjustment Act	to improve the utilization of agricultural resources of the province. allows establishment and operation of community pastures on provincial lands controlled by Department of Agriculture.	Department of Agriculture
	The Expropriation Act	provides that Minister of Agriculture may take possession of any land required for projects under The Prairie Farm rehabilitation Act	Department of Agriculture
	The Land Titles Act	establishes registration districts outlines provisions concerning certificate of title, instruments that may be registered, involuntary transfer of title, and court and other proceedings. any person owning land may apply for registration under this Act.	Attorney General's Department
	F. The Prairie Farm Rehabilitation Act	provides for development and promotion of good farm practices. enabling legislation for PFRA community pastures.	Federal Department of Regional and Economic Expansion
Forestry	The Forest Act	provides for the establishment of provincial forests to: (a) reserve areas in the province for the perpetual growth of trees; (b) preserve the forest cover on these areas; (c) provide for the reasonable use of all resources contained in forest land. regulate harvest of wood; establishes standards for forest use; designates cutting areas; establishes rates for dues on forest products and fees for management licences, timber permits and sales.	Department of Tourism and Renewable Resources
Fish and Wildlife	The Fur Act	to regulate harvest of, interference with, destruction of or molesting of fur animals.	Department of Tourism and Renewable Resources
	The Game Act	provides the right to harvest game on a regulated basis. enables designation of game preserves, bird sanctuaries, game management zones. permits establishment of Wildlife Development Fund Lands.	Department of Tourism and Renewable Resources
	F. The Fisheries Act	provides that federal government has full jurisdiction over coastal and inland fisheries in Canada	Federal Department of Fisheries and Environment Canada

Land Use or Resource	Act	Purpose	Administering Agency
	F. The Migratory Birds Convention Act	regulates control and management of migratory birds.	Federal Department of Fisheries and Environment Canada
Minerals	The Mineral Resources Act	to promote and encourage the discovery, development, management, utilization and conservation of mineral resources. to regulate disposition of Crown mineral lands. to protect landowner's mineral and surface rights.	Department of Mineral Resources
	The Oil and Gas Conservation Act	regulates all operations for the production of oil and gas	Department of Mineral Resources
	The Sand and Gravel Act	provides for the ownership of surface sand and gravel by property owner as part of the surface.	Department of Mineral Resources
Recreation	The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act	provides for designation of provincial parks; enables regulations for protection and management.	Department of Tourism and Renewable Resources
	The Regional Parks Act	provides for establishment of regional parks and regional park authorities.	Department of Tourism and Renewable Resources
	The Rural Municipality Act	provides for licensing, regulating and controlling of places of amusement and licensing of operation of trailer parks and camps.	Department of Municipal Affairs
	The Urban Municipality Act	provides for the formation of resort villages. enables bylaws for construction and regulation of recreation facilities.	Department of Municipal Affairs
	F. National Parks Act	provides for establishment of national parks.	Federal Department of Indian Affairs and Northern Development
Water	The Water Resources Management Act	sets out responsibility for overall policy formulation and planning of water management.	Department of the Environment
	The Water Rights Act	requires all users of water to acquire a license expect domestic users.	Department of the Environment
	The Ground Water Conservation Act	to provide for the conservation, development, and utilization of ground water resources and to prevent pollution and contamination of ground water.	Department of the Environment
	F. The Canada Water Act	to provide for the management of the water resources of Canada including research and the planning and implementation of programs relating to the conservation, development and utilization of water resources.	Federal Department of Fisheries and Environment
	F. The International Boundary Water Treaty	prohibits use or diversion which would affect natural flow or level of water into the U.S.A. without the consent of Canada.	External Affairs
	F. The International River Improvement Act	imposes control on international river improvements that would increase, decrease or alter the natural flow.	Federal Department of Fisheries and Environment
	F. The Navigable Waters Protection Act	prevents obstruction of navigable waters, governs placing of structures on or in such waters and forbids dumping material liable to interfere with navigation in navigable waters or streams flowing into such waters.	Federal Ministry of Transport
Heritage Lands	The Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act	enables designation of protected areas for protection and preservation of historical features.	Department of Tourism and Renewable Resources
	The Saskatchewan Heritage Act	to co-ordinate orderly development, preservation study, interpretation, and promotion and appreciation of heritage property.	Department of Culture and Youth
	F. The National Parks Act	to commemorate and preserve historic landmarks or objects of historic, pre-historic or scientific interest or national significance.	Federal Department of Indian Affairs and Northern Development

Problems and Conflicts Associated With Regulation of Land and Resource Use

Jurisdiction: At first it might appear that the division of powers in the B.N.A. Act is clear and unquestionable. However, many conflicts and difficulties have arisen between the provincial and federal governments. Some of the difficulty over which level of government has jurisdiction in certain areas is caused by an inadequate or vague definition of powers in the Act.

Some conflicts arise from the separation of powers as they exist in the Act itself. When legislative powers were assigned, many of the resource management problems were not foreseen. Under The B.N.A. Act, the federal government was assigned responsibility for any "new" powers. A major problem in resolving some conflicts is deciding what constitutes a "new" power and what is really an extension of existing powers. Some of these disputes, such as the conflict over management of mineral resources, have had to be resolved by the Privy Council of Great Britain or the Supreme Court of Canada. Still other conflicts remain unresolved, and it is likely that more points of disagreement will develop as both levels of government seek to extend their respective spheres of authority.

Conflicts sometimes arise over administration of legislation. For example, the legislative authority for managing migratory birds rests with the federal government under The Migratory Birds Convention Act. Yet, the means to manage the habitat and administer hunting programs exists in the province. Recently, problems have arisen in providing compensation for damages caused by migrating birds.

Problems which arise between provincial and municipal governments are somewhat different because powers of municipalities are assigned by the provincial legislature. In cases where a land use activity is in the interest of the province, provincial jurisdiction overrides municipal authority. For example, the provincial government may intervene in planning the location of utility corridors for uses such as pipelines, roads, and transmission lines when the provincial requirements may differ from municipal needs.

The provincial government may also need to deal with intermunicipal problems and conflicts which arise over adjacent land uses. Examples include control of noxious weeds and pests, zoning land for specific uses, and the formation of special planning areas. In addition, provincial legislation has a major influence in the functioning of local government because many land uses must meet specific requirements (e.g. sewage and solid waste disposal, waterworks, location of feedlots).

Legislation: The objectives of early resource departments were primarily to administer the conveyance of Crown lands and resource rights to settlers in a simple, orderly fashion. As the demands for land and its resources increased, so did the need for specialization in management of these resources. Thus, numerous administrative agencies and enabling legislation have been developed to deal with the demands. As a result there is today a complex body of legislation regulating land use.

One problem which arises is that several pieces of legislation may be directed at the same objective. Thus, it is possible that two departments using separate Acts may attempt to accomplish the same end. For example, land use districts, which are virtually identical in description, can be designated by the Department of Municipal Affairs by regulations under The Planning and Development Act as "special planning areas" and by the Department of the Environment under The Water Resources Management Act as "reservoir development areas." In another case, restricted development areas along highways can be established by the Department of Highways and Transportation under The Highways Act and by the Department of Municipal Affairs under The Planning and Development Act.

Another kind of problem arises when acts which have opposing goals may be administered by the same agency. For example, the Department of Tourism and Renewable Resources administers acts enabling use of resources such as forest and wildlife as well as acts directed at preserving and/or protecting natural resources.

Problems also arise when legislation does not exist to regulate specific land uses or resolve land use conflicts. For example, in recent years a number of disputes have occurred over damages to adjacent property caused by drainage of a wetland area.

Policies and Programs: Although pieces of legislation enabling administration and regulation of land use may not conflict, the programs initiated to carry out the intent of legislation in one field of resource management may conflict with management of another resource. For example, a program to improve pasture land for forage production may conflict with a program to improve wildlife habitat for deer or upland game birds. Similarly, a program focused on clearing land for cultivation or improving land by drainage may conflict with a program to improve and/or preserve wildlife habitat.

Conflicts also occur in determining policies for management of a land area that is suitable for a variety of uses. As mentioned above, land designated as a provincial park may also be used for livestock grazing, timber harvesting and mineral extraction (gravel, oil, gas). Similarly, forest lands may be used for a number of other uses. Some land areas can support multiple use of resources if the uses are compatible and if no one use is maximized to a degree that hinders other uses. For example, mixed forests can support ungulate populations which in turn provide opportunities for hunting. However, extensive timber harvest or hunting affects wild animal populations. On the other hand, large increases in ungulate populations could affect forest regeneration.

In developing management polciies, we must recognize that some land uses are not compatible. For example, development of a serviced recreational area close to a bird sanctuary would defeat the purpose of the sanctuary.

Concerns expressed by individuals, interest groups, and government agencies about land use policies resulted in two provincial workshops to discuss land use. Delegates to Workshop I agreed that a land use policy is required to co-ordinate various existing pieces of legislation affecting land use, to co-ordinate land use decisions in various areas, and to protect future uses of land and resources (see Fact Sheet 1).

Delegates to Workshop II recommended a number of guidelines, covering a wide range of land uses, to serve as a basis for a comprehensive land use policy (see Fact Sheet 2). Many of the guidelines address policy issues. For example: Forestry guideline 1 — Manage forest land as a sustaining multiple-use resource; Mineral land guideline 1 — Ensure mined land is reclaimed to the highest possible use; Settlement lands guideline 2 — Develop more effective use of land utilized for transportation.

In most cases, legislation now exists to implement policies based on these guidelines. The problem is not so much one of implementing policies but rather one of determining how policies and programs can be co-ordinated. Responsibility for administering land is divided among a number of agencies. A mechanism is required to enable exchange of information, to update information and to resolve apparent conflicts between various pieces of legislation and between different levels of government. In addition, a mechanism is required to enable public input into decisions about the way in which land is used.

The users, administrators, and managers of land and its resources can no longer pursue independent policies and programs. To resolve present and potential conflicts, policies and programs must be co-ordinated to enable wise use of the land and its resources.

Land Use or Resource	Act	Purpose	Administering Agency
	F. The National Historic Monuments Act	enables marking or commemorating historic places; acquiring and administering land for this purpose.	Federal Department of Indian Affairs and Northern Development
Settlement Lands	The Rural Municipality Act and The Urban Municipality Act	provide authority for municipal councils to administer land within the municipality such as assess property for taxation purposes, license businesses and other uses, provide and regulate public services, control and manage public roads.	Department of Municipal Affairs
	The Planning and Development Act	enables municipal councils to prepare municipal development plans and zoning bylaws to plan for and control use of public and private land.	Department of Municipal Affairs
Environmental Protection	Acts Listed Under Water		
	The Pollution (By Livestock) Control Act	regulates operation of intensive livestock operations.	Department of Agriculture
	The Water Pollution Control Assistance Act	provides for financial assistance for establishment and improvement of water pollution control works.	Department of the Environment
	The Mineral Resources Act	regulates disposal of mining wastes.	Department of Mineral Resources
	The Public Health Act	regulates waterworks, sewerage and sewage and solid waste disposal.	Department of Health
	The Pest Control Products Act	regulates use of pest control products.	Department of Agriculture
	The Pollution of Waters (Prevention) Act	prohibits pollution of waters.	Department of the Environment

* *F. Indicates federal legislation.*

Additional Reading

Canadian Council of Resource and Environment Ministers. 1972. *The Administration of Crown Lands in Canada.* 479 p. Available from Secretariat, CCREM, 1170 Beaver Hall Square, Montreal 111. Price: $10.00.

Canadian Industries Limited. 1973. *A Digest of Environmental Pollution Legislation in Canada.* Volume 1: Water. Volume 2: Air and Soil. Available from Canadian Industries Limited, Box 10, Montreal 101. Price: $12.00 two volumes.

Saskatchewan Department of the Environment. 1976. *Designated Land Areas in Saskatchewan.* 118 p. Available from Department of the Environment, 5th Floor, 1855 Victoria Avenue, Regina, S4P 3V5.

Saskatchewan Department of the Environment. 1977. *Land Use in Saskatchewan.* 192 p.

Saskatchewan Department of the Environment. 1976. *Saskatchewan Environmental Legislation.*

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